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FAMILY ECONOMICS REVIEW

HIGHLIGHTS / SPRING 1976

THE FARM FAMILY LIVING SURVEY

CANNING AND FREEZING

HOW HOUSEHOLDS USE ENERGY

THE IMPACT OF INFLATION

CONSUMER RECORDS

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FAMILY ECONOMICS REVIEW is a quarterly report on research of the Consumer and Food Economics Institute and on information from other sources relating to economic aspects of family living. It is prepared primarily for home economics agents and home economics specialists of the Cooperative Extension Service.

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FAMILY EXPENDITURES: THE FARM FAMILY LIVING SURVEY¹

by Fred C. Thorp
Statistical Reporting Service

During 1973 and early 1974, the Statistical Reporting Service of the U.S. Department of Agriculture conducted a comprehensive survey to determine living expenditures for farm operators' families. Data were collected from 2,600 families by personal interviews.

Expenditures in 1973

The survey results indicate farm families in the United States spent an average of \$9,317 in 1973, or a total of \$27 billion. The family income from farm and nonfarm sources, before taxes, averaged \$12,371 and after taxes, \$10,965. Net farm income rose to \$33 billion in 1973 from \$18 billion in 1972, so expenditures in 1973 may have been somewhat atypical. However, the expenditure patterns follow earlier survey findings.

Housing, food, and clothing usually referred to as the basic categories accounted for 57.4 percent of the total expenditures.

Housing, including shelter, household operations, furnishings, equipment, and utilities took the largest amount—\$2,671 per family or 28.7 percent, of the total expenditure. Of each dollar spent for housing, about one-half was for shelter, one-fourth for furnishings and equipment, and one-fourth for the operation of the household. This breakdown is fairly consistent for all economic groups.

Food, excluding the value of products consumed on farms where grown, but including nonalcoholic beverages, meals eaten away from home, and food stamps was second with 21.6 percent of the total, or an average of \$2,021. Food stamps accounted for \$7.24, or about 0.1 percent of the average family expenditure. About 82 cents of the food dollar expenditure went for food and nonalcoholic beverages used at home. Food consumed away from home accounted for roughly 18 cents. The percentage of the food dollar used for food away from home tended to decrease as income decreased.

The survey did not ask highly detailed questions on food purchases; nor were families asked to keep a diary. The questions asked for usual amounts spent per week or per month.

Transportation constituted the third largest component of family spending. The purchase, operation, and maintenance of motor vehicles took 17.6 percent for an average of \$1,639. Almost one-half was for the purchase of motor vehicles. The transportation dollar breaks down into an average of 46 cents for the purchase of motor vehicles, 40 cents for operating expenses, 12 cents for maintenance and repair, and 2 cents for other travel and transportation. Higher income families spent more of their dollar on the purchase of vehicles and less on operating expenses, the reverse being true for lower income families. Maintenance and repair took roughly 12 cents of the transportation dollar for all income classes.

Clothing expenditures were a distant fourth in importance with 7.0 percent of the total, or an average of \$648 per family. The share of the clothing dollar averaged 34 cents for purchases for females ages 16 and over; 10 cents for girls 2 to 15 years of age; 31 cents for males 16 and over; 10 cents for boys 2 to 15 years of age; 2 cents for children under 2 years; and 13 cents for materials and services which were not identified with individual family members. This allocation of the clothing expenditure was generally true for all income classes.

Medical care cost each family an average of \$624 and accounted for 6.7 percent of total expenditures. Health insurance premiums made up 38 cents of the dollar spent for medical care. The percent of the dollar decreased as income decreased, going from 42 down to 31 percent. However, this does not necessarily mean that the lower income families have less protection, since more of them have off-farm jobs that include health benefits.

Gifts and contributions made up 3.9 percent of the total, followed by personal insurance with 3.4 percent. About 2.3 percent of the family expenditure was for personal care. Recreation, reading, education, tobacco, alcoholic beverages, and other expenditures

¹ This article is condensed from a paper given at the National Agricultural Outlook Conference in November 1975. The complete paper may be ordered from the Consumer and Food Economics Institute (see page 2 of cover for address).

accounted for the remaining 8.7 percent. Of these items, education, with 1.7 percent or an average of \$160, was the largest, followed closely by recreation and reading with 1.5 percent, or an average of \$140.

Changes in Spending Patterns Between 1955 and 1973

The last comparable expenditure survey conducted by the Department of Agriculture (USDA) was in 1955 and included 3,845 respondents. Rural farm family expenditure data are available for 1961 as a part of the Bureau of Labor Statistics (BLS) nationwide survey of consumer expenditures. These data, however, are not directly comparable with the 1955 and 1973 surveys because of some differences in concepts and collection procedures.

The farm family averaged 3.5 persons in 1973, down from 3.8 in 1955. The average age of farm operators (head of household) in the 1973 survey was 50.4 years, compared with 49.6 years in 1955. Total expenditures for family living in 1973 were more than \$9,300. This is nearly triple the average expenditure of \$3,300 in 1955. When the change in price level is taken into account, real consumption was up about 70 percent. In 1973, U.S. farm families were using a smaller proportion of their total expenditures on food, clothing, medical care, tobacco, and alcoholic beverages than in 1955. A greater proportion of the family expenditures was used for transportation, education, personal insurance, gifts, and contributions.

Housing was the largest expenditure grouping for farm families in both 1955 and 1973, accounting for 28.1 percent of total expenditures in 1955 and 28.7 percent in 1973. Compared with 1955, a greater proportion of the 1973 housing dollar was used for shelter and less for furnishings and equipment and household operations. In 1973 about 47 percent of the housing dollar was for shelter compared with 38 percent in 1955. Expenditures for food and beverages predictably decreased in importance from 25.2 to 21.7 percent. Traditionally, food responds less than other categories to increases in family income. The largest percentage increase between the 2 years occurred in automobile expenditures. These rose from 11.0 to 17.2 percent of total expenditures. Auto sales were a record high in 1973 and farm families were using a significant por-

tion of their income for auto and truck purchases. Respondents were asked to report motor vehicle purchases for 1970 through 1973. The family share (excluding costs charged to the farm as production expenses) of all motor vehicle purchases averaged \$298 for 1970, \$433 for 1971, \$691 for 1972, and \$756 for 1973. Expressed as a percent of operator's realized net farm income, the purchases would represent 7, 12, 14, and 10 percent for those four years. This shows a substantial upgrading of transportation in 1971, 1972, and 1973. Clothing expenditures declined sharply as a proportion of total spending, from 13.0 to 7.0 percent. Also, tobacco and alcoholic beverages took a sharply smaller proportion of spending in 1973 than in 1955. Expenditures for education and personal insurance were up substantially in 1973. About the same percentage of total expenditure was used for recreation and reading and personal care in 1973 as in 1955.

Spending Patterns Related to Farm Product Sales

Survey data have been summarized by economic class of farms based on income from sales of agricultural products. Below are the sales classes and percent of farm families in each group.

<u>Farm product sales</u>	<u>Percent</u>
Stratum 1 - \$40,000 or more	18.9
Stratum 2 - \$20,000 to \$39,999	14.5
Stratum 3 - \$5,000 to \$19,999	24.8
Stratum 4 - \$1,000 to \$4,999	25.7
Stratum 5 - Less than \$1,000	16.1

On average, off-farm income made up over one-half of the money income before taxes for all farm families. For Stratum 1 farms, it averaged about 25 percent of total income and climbed to over 90 percent for Strata 4 and 5. Money income before taxes was \$21,700 for Stratum 1 farms, then dropped to \$12,400 for Stratum 2. Stratum 3 farms averaged \$10,300, Stratum 4, \$9,500, and Stratum 5, \$9,000.

The housing category was the largest expenditure for all strata farms and accounted for 28 to 30 percent of the family budget. In this category, the average expenditure for shelter ranged from \$1,824 per year for Stratum 1

farms downward to \$941 for the Stratum 4. Family spending for furnishings and equipment ranged from \$1,117 for Stratum 1 to \$507 for Stratum 5. Household operation costs were between \$675 to \$700 for Strata 3 to 5, \$757 for Stratum 2, and \$852 for Stratum 1:

Food ranked second in overall importance, with expenditures taking a greater proportion of the total as the income levels dropped. Food accounted for 18.6 percent of the total for Stratum 1 farm families and 24.6 percent in Stratum 5. Actual expenditures ranged from \$2,526 for Stratum 1 to a low of \$1,776 for Stratum 4.

Transportation made up about 16 percent of total expenditures for Strata 1 and 2 farms, 17 percent for Stratum 3, and over 19 percent for Stratum 5. Expenditures for purchases of motor vehicles for Stratum 1 averaged \$1,189, more than 1½ times the outlay for Stratum 2. The expenditures for farms in Strata 3 through 5 were between \$600 and \$650. Strata 1 and 2 spent the most on vehicle maintenance and repair, at \$241 and \$205, respectively. The remaining groups spent an average of \$175 to \$180. Operating expenses averaged \$740 for the larger farms then dropped to \$615 to \$635 for Strata 2, 3, and 4, but went up to \$685 for Stratum 5. This probably reflects more driving to off-farm jobs.

Clothing expenditures as a percent of total expenditures for family living ranged from 6.5 to 7.4 percent for various strata. The dollar expenditure for Stratum 1 was nearly \$1,000, then dropped to \$707 for the next stratum, and averaged \$602, \$493, and \$504 for the next three respective groups. This same pattern held for purchases of men's, women's, and children's clothes.

Medical care required 6 to 7 percent of the family budget. Annual expenditures followed income, amounting to \$885 for farms with the upper incomes to \$472 for farms with the least income.

Personal care also followed income, accounting for 2 to 2.5 percent of total family living expenditures. Tobacco and alcoholic beverages made up about 1 percent of the total expenditure for each strata. Recreation and reading, education, personal insurance, and cash gifts and contributions outlays all decreased as income decreased, both in terms of dollars and as a percent of total expenditures.

Percent of Families Reporting Selected Expenditures

The survey data indicated that about 80 percent of the farm-operator families owned the dwelling they occupied. This is based on 81 percent of the respondents reporting property taxes paid on owner occupied dwellings. Cash spent for living quarters was reported by 12 percent of the families. The remaining families had other arrangements for housing, such as house included with farmland rent, living with parents, or living in a rent-free dwelling.

Health insurance premiums were paid by 72 percent of the families. By farm income groups, the percent reporting were 83, 79, 70, 71, and 60, respectively, for Strata 1 through 5. Hospital expenses were reported by about one-fourth of the families, with the percentage ranging from 22 for the lower income group to 27 percent for the upper income farms.

During 1973, nearly 30 percent of the families purchased one or more autos to be used for the family. Surprisingly, this was only slightly above 1972. The big increase of families purchasing autos occurred between 1971 and 1972, when the percent purchasing jumped from 18 to 29 percent.

In the home-furnishing line, 16 percent purchased bedroom furniture, 11 percent outdoor patio furniture, 11 percent color TV sets, 8 percent dining room furniture, 5 percent kitchen furniture, and 2 percent pianos or organs. Clothes washers were the most frequently purchased major appliance with 10 percent of the families purchasing them in 1973. Percent of families purchasing other major appliances were: Cook stoves 9 percent, refrigerators 9 percent, homefreezers 7 percent, clothes dryers 6 percent, sewing machines 5 percent, dishwashers 4 percent. Purchases of one or more small electrical kitchen appliances were made by 37 percent of the farm families. Twenty percent purchased electrical personal care equipment. Photographic equipment purchases were made by 9 percent of the respondents and 7 percent reported buying stereo sets or components.

Source for Additional Data

Survey results of the 1973 farm family expenditure survey are published in a Statistical Reporting Service publication titled,

"Farm-Operator Family Living Expenditures for 1973," Sp Sy 6 (9-75). Copies may be obtained from the Crop Reporting Board, Sta-

tistical Reporting Service, USDA, Washington, D.C. 20250.

RECENT CHANGES IN AMERICAN FAMILIES

Marriage rates were lower and divorce rates were higher in August 1974 than in August 1973. Other recent changes in family lifestyles include more delay in marriage, changes in divorce patterns among social levels, and a decrease in household size. This information is contained in "Recent Changes in American Families," the first in a new series of occasional reports prepared by the Population Division,

Bureau of the Census. These reports, published in Series P-23 of Current Population Reports, will include broad speculative analysis and illustrative hypotheses as an aid in understanding population statistics and in assessing their potential impact on public policy. (U.S. Department of Commerce, Bureau of the Census, Population Division, Washington, D.C. 20233.)

CANNING AND FREEZING—WHAT IS THE PAYOFF?¹

by Evelyn H. Johnson, Extension Service

The science of nourishment is both intellectual and practical. The practical aspect was brought forcibly to our attention in recent months as some 30 million Americans rushed out to beat inflation with a garden hoe and a jar lid. These gardeners have produced some prize-winning blisters and aches. They have reached a low level of despair with the elusiveness of canning lids, the fickleness of jelly that didn't jell, pickles that didn't pickle, and tomatoes that didn't pH properly. Many gardeners, though, have found an unsuspected green thumb. They exposed friends and family to fresh-from-the-garden produce and take-home presents. They have freezers and shelves well stocked with containers of home-preserved fruits and vegetables.

Home food preservation saves money. Or does it? There are many hidden costs that must be considered in home canning and freezing of foods—costs of produce, equipment, heat and energy consumption, and interest on large cash

outlays such as a freezer. Furthermore, there is a considerable time expenditure. If you have marketable skills, your time might be more profitably spent earning dollars instead of gardening or preserving food.

Cost of Produce for Canning and Freezing

Produce used in home canning and freezing may come from several sources—home gardens, roadside markets, Pick-your-own fields, or gifts from friends—and the price will vary accordingly. In July 1975, in Ithaca, N.Y., 1 bushel of green peas cost \$6 from a roadside stand, \$3 in a pick-your-own field, and \$1.17 plus a share of fixed costs from a home garden.² Before you rush out to plant a garden, however, consider the potential costs: Tilling the soil, fertilizer, garden tools, pesticides, and water. Remember that even experienced gardeners suffer some crop failures as well as bountiful harvests!

In 1973, Barbara Bridges, a student at the University of Maine, did a research project entitled "Home Vegetable Gardening—From

¹ This article is condensed from a paper given at the National Agricultural Outlook Conference in November 1975. The complete paper may be ordered from the Consumer and Food Economics Institute (see page 2 of cover for address).

² Klippstein, R. B., and Wallace, E. *Actual Costs of Home Food Preservation*. Division of Nutritional Sciences, Coop. Ext. Serv., Cornell Univ. 1975.

Seed to Table.” The results of this theoretical study indicated expenses of \$92.64 for harvesting 1,409 pounds of fresh vegetables from a 4,800-square-foot plot. The total value of the vegetables was estimated (using local chainstore prices) at \$521.11, a profit of approximately \$430. Add \$189 for labor to the expense column and the garden will still return about \$240. Multiplied by several years of gardening, or by the local population of gardeners, the result is impressive.

A 30- by 30-foot plot planted by Julian A. Wesley, an Extension agent, Milwaukee County, Wis., produced vegetables valued at \$179.53 for a cash outlay of \$27.45 for seeds, plot rental, fertilizer, and tools. Wesley estimated that about 75 man-hours of labor at \$2 per hour would wipe out most profits. He suggests that vegetable growing be considered as recreation.

In addition to the cash a family need not spend at the supermarket, a gardener gains through healthy outdoor exercise, opportunities for family activities, and across-the-fence neighborliness. Perhaps, the decreased time spent in shopping for fresh produce is an asset for some families. Certainly all in the family welcome the fresh-from-the-garden taste when dinner is served.

Cost of Home Freezing and Storage of Food

Your garden is setting a production record. Your favorite supermarket has a special on locally grown green beans. Should you freeze or not? Marcile Allen, Extension specialist in nutrition at Purdue University, thinks, “Freezing may be the answer—if you have freezer space. It can be the key to varied family meals, an easy and excellent way to preserve many of today’s surpluses for tomorrow. But selecting a freezer to fit your needs and filling that freezer with high quality food takes time, energy, money, and know-how.”

The two main advantages of freezing are that (1) the procedure is simple to do and (2) freezing will keep foods closer to fresh than any other method of preservation. The main disadvantages are the costs of purchase and operation of the freezer.

Studies recently made by Extension nutritionists in the Division of Nutritional Sciences at Cornell University indicated that food frozen at home costs almost 19 cents per

pound more than that purchased and consumed as needed, even when using an energy-efficient freezer to full capacity in an area where electric rates are relatively low (see footnote 2). High electric rates, poorly operating freezers, or inefficient use of freezer space or materials will add to the cost, in some cases as much as 53 cents per pound of food.

There are fixed and variable costs associated with owning and using a freezer. Fixed annual overhead costs include the cost of the freezer amortized over the number of years the freezer is expected to be used, interest foregone on the money used to purchase the freezer, an annual repair allowance, and the cost of electricity to maintain the freezer temperature at 0° F. Variable costs include the cost of electricity to freeze food and lower its temperature to 0° F, and the cost of packaging, water, and fuel to prepare foods for freezing. These costs vary with the amount of food frozen.

To calculate the annual overhead cost of any freezer, divide the total cost of the freezer, including finance charges, taxes, delivery, and installation, by the length of time³ you expect to keep the appliance. Add 5 to 6 percent of the cost of the freezer to account for interest that could have been earned if the money had been put to some other use, and 2 percent of the purchase price as an allowance for repairs.

The electrical energy required to maintain 0° F in a home freezer varies, depending upon the size and type of freezer. You may pay heavily for the convenience of frostless freezers. A 15-cubic-foot conventional freezer, with an average wattage of 341, that uses approximately 1,165 kilowatt-hours (kWh) per year will cost \$46.60 in electrical energy (assumes a cost of 4 cents per kWh). By comparison, a frostless freezer of the same size, with an average wattage of 440, using 1,761 kWh per year, cost \$70.44 to operate. The size of the freezer makes a difference also. Assuming a cost of 4 cents per kWh, a 6-cubic-foot freezer may cost \$26.28 per year to operate; a

³ The average service-life expectancy of a new freezer has been estimated by USDA to be 20 years; 9 years for a used freezer. This is the number of years, on the average, families actually keep freezers, not how long they can be made to last. Many factors influence the decision to replace or dispose of an appliance. See the Summer 1975 issue of *Family Economics Review* for a discussion of the service-life expectancy of appliances.

12-cubic-foot freezer, \$43.80; and an 18-cubic-foot freezer, \$52.56.⁴

The table below shows annual overhead costs for owning and operating a 15-cubic-foot freezer which cost \$300, plus \$41 for sales tax and delivery charge (see footnote 2 for source).

Item	Cost
	<i>Dollars</i>
Amortization ((\$341. divided by the 20-year expected life)	17.05
Interest foregone ((\$341. at 6 percent)	20.46
Annual repair allowance (at 2 percent of \$300.)	6.00
Electricity to maintain 0° F	36.75 to 204.12
Total overhead	80.26 to 247.63

In addition to the overhead costs that are incurred simply by owning a freezer that is plugged in, there are additional costs associated with the amount of use the freezer gets. It takes about 0.1 kWh to freeze a pound of food and lower its temperature to 0° F. The annual cost of electricity for freezing food will depend on the freezer, the total number of pounds frozen, and the local cost of electricity.

The cost of packaging including reusable containers is about 2 to 6 cents per pound. Aluminum foil costs more; rigid containers, amortized over several years, may cost less. The cost of packaging to freeze 1 pound of food is:

Packaging material	Size	Price (cents)
Heat-sealable pouch	6½ in X 8 in	6.4-6.7
Bag with twist tie	1 pt	1.2-2.0 ¹
Plastic carton	1 pt	19.0-38.0 ²
Glass jar	1 pt	21.0-22.0 ²
Plastic freezer wrap	1½ sq ft	1.2-10.5
Coated freezer paper	1½ sq ft	1.8-4.5
Heavy duty aluminum foil	1½ sq ft	5.2

¹ This cost does not include the cost of cover boxes which shape the filled bags into uniform sizes for compact storage and prevent tears in the bags. The cost of the pint-sized cover box is about 2 to 4 cents and can be used many times.

² Reusable.

⁴ Adapted from Van Zante, H. J. *Household Equipment Principles*. Englewood Cliffs, N.J.: Prentice-Hall.

Examples given for kWh per year are illustrative only and do not represent an average for all models or the energy usage of any particular models. In addition to differences due to the self-defrost feature and size, energy costs will vary with the amount and type of insulation, whether the freezer is an upright or chest type, and other design features.

The cost of water and fuel used in washing, blanching, and chilling foods is estimated at 0.004 cent or slightly less than a half cent per pound of food.

Table 1 estimates the range of fixed and variable costs of freezer operation in a 15-cubic-foot freezer. Table 2 estimates the cost of operating a 12-cubic-foot freezer filled to capacity 1 time during a year, 1½ times, and 2½ times. The amortization was figured over 20 years in table 1 and 15 years in table 2, the interest rate was 6 percent in table 1 and 3 percent in table 2, and packaging was 5 cents per pound in table 1 and 3 cents in table 2. Note the increase in costs for electricity and packaging as more food is frozen, but the reduced total cost per pound.

To save money by home freezing foods, a family would need to select a freezer to fit family needs, use it properly, freeze only those foods the family likes to eat and in amounts they can enjoy, and find economical sources of those foods. Just storing food in a freezer may raise the price by 20 cents per pound over a year's time. Opening the doors or keeping the freezer in a warm place will increase the electrical costs. Excessive or wasteful use of packaging materials is costly also (see footnote 2).

Costs of Home Canning

Canning is probably the most economical and practical method of preserving food in the home. The canning operation varies tremendously from household to household—as to what foods are canned, how they are processed, the kinds of containers and equipment, and the amount canned at a given time. Some families combine their canning activities and share the results. Most home canners grow their food; others purchase it at farm markets or harvest fields. These factors, as well as the costs of labor, energy, water, and ingredients added during the canning process, determine the total cost of home canning. Inconsistency of these factors from household to household and community to community makes it impossible to derive a cost (per pound of home-canned food) that applies to *all* household situations. Information can be provided to help the home canner figure fairly accurately the costs of canning various foods in a given household situation.

The cost of produce may be the major expense in canning if the produce is purchased

Table 1. Annual cost of freezing and storing food
in a 15-cubic-foot freezer

Expense	Pounds of food stored	
	525	1,312
	<i>Dollars</i>	<i>Dollars</i>
Overhead (fixed costs)....	80.26 to 247.63	80.26 to 247.63
Cost to store prepackaged, frozen food (overhead divided by the number of pounds stored).....	.15 to .47	.06 to .18
Packaging (at 0.05 per pound	26.25	65.60
Electricity to freeze food (at 0.1 kWh per pound, ranging from 0.03 to 0.09 per kWh)....	1.58 to 4.73	3.94 to 11.81
Total annual cost	108.09 to 278.61	149.80 to 325.04
Total cost per pound to package, freeze, and store food .....	.20 to .53	.11 to .25

Source: Klippstein, R. B., and Wallace, E. *Actual Costs of Home Food Preservation*. Division of Nutritional Sciences, Coop. Ext. Serv., Cornell Univ. 1975.

at local food markets. Growing your own produce or buying it directly from the farm and orchard, may give you good quality produce at less cost during the height of the season. Consider, also, the cost of added ingredients—sugar, vinegar, spices, pectin, and salt. (Figure the cost of sugar by allowing 2¼ cups per pound.)

The most expensive piece of equipment for home canning is a pressure canner, ranging in price from \$40 to \$75 for models commonly used. Smaller models priced from \$20 to \$35 may be more practical for the small family or inexperienced canner who doesn't plan to can large quantities of food. The initial cost of the pressure canner can be amortized over an anticipated 15- to 20-year life expectancy. Add 2 percent of the purchase price to cover the cost of repairs per year—gasket and pressure control safety valve. (There should not be a need for repairs for several years after the pur-

chase of a new canner.) A large water bath canner is needed for processing fruits, tomatoes, pickles, and preserves. One can be purchased for \$6. A jar lifter for about \$2 to \$3, a funnel, and a canning book are all that is needed to turn the home kitchen into a small cannery. New canning jar units range in price from about \$2.29 to \$3.49. The price of glass jars can be amortized over a 10-year average life span. Canning lids vary widely in price, from 1.5 to 5 cents per lid. Rings are about 1 cent, amortized over 10 years.

The cost of electrical energy required for processing can be determined if the electrical input of each range surface unit being used, time at each heat setting, and local fuel costs are known. The amount of gas used can be determined only if a monitoring meter is used. Water for washing produce and steam for blanching can be estimated at a cost of 0.4

Table 2. Cost of operating a 12-cubic-foot freezer

Item	Filled to capacity--		
	1 time (360 lb)	1½ times (540 lb)	2½ times (900 lb)
	<i>Dollars</i>		
Net depreciation, based on 15-yr usage, cost of \$250 when new	16.39	16.39	16.39
Return on investment foregone at 3%	11.26	11.26	11.26
Repairs (2% of purchase price)...	5.00	5.00	6.00
Electricity for freezing food at 4¢ per kWh	1.44	2.16	3.60
Electricity for maintaining 0° F 1,100 kWh at 4¢ per kWh ...	44.00	44.00	44.00
Packaging, average 3¢ per pound .	10.80	16.20	27.00
Total cost per year	88.89	95.01	107.25
Cost per pound	0.24	0.17	0.12

Source: Barton, J. A., Extension Specialist Foods and Nutrition, VPI and Virginia State Univ., 1975.

cents or about one-half cent per pound of food canned.

The table below gives an estimated cost for canning 280 quarts of food. Note that neither the cost of food nor the cost of labor is included.

Item	Cost
	<i>Dollars</i>
Pressure canner (amortized over 20 yr)	3.25
Repairs .....	.75
Water-bath canner (amortized) .....	.60
Small equipment .....	.50
Jars and lids (amortized over 10 yr)	12.00 to 16.00
Water and steam	5.00
Electricity for processing at 4.5¢ per kWh:	
140-qt pressure canner	1.30
140-qt water-bath canner	2.00
Total	25.40 to 29.40
Per quart .....	.09

Recent studies at Cornell University (see footnote 2) indicated that the cost for canning a quart of tomatoes at home ranged from 4.3 cents, if jars were on hand and the tomatoes

were free of cost, to almost 51 cents if both jars and tomatoes were bought. They estimated the range in cost for home canning green beans as 4 cents a quart to 63 cents a quart, and the cost for a quart of peaches in syrup from 20.5 cents to 90.5 cents. Their cost analysis for canning the three foods is shown in table 3. Note that the *total cost per quart* does not include cost of time spent and equipment used. Cost of equipment would add one-fourth to one-half cent per quart to the total cost as given. Total cost per quart could be reduced through greater yield per bushel by careful shopping or home gardening.

Theodore Wishnetsky and Jerry Cash, Cooperative Extension Service, Michigan State University, state that the main reasons for the lack of previously published information on home food preservation costs is the inherent uncertainty involved in deciding the bases for calculating many of the cost factors. They

Table 3. Cost analysis of home canning—June 1975
(Cost per quart)

Cost of jar units or lids		Cost of produce ¹		Cost of additional ingredients	Cost of processing (electricity)	Total cost per quart (using electricity)	
Jars	Lids	Gift	Buy				
Peaches (1 bushel at \$9.25 yielded 20 quarts)							
On hand:	0.0¢	4.6¢ (at 55¢/doz)	0.0¢	46.3¢	Sugar: 15¢	0.9¢	20.5¢ to 66.8¢
Purchased: (at \$3.39/doz includes lids)	28.3¢	0.0¢	0.0¢	46.3¢	Sugar: 15¢	0.9¢	44.2¢ to 90.5¢
Tomatoes (1 bushel at \$4.25 yielded 17 quarts)							
On hand:	0.0¢	3.3¢ (at 39¢/doz)	0.0¢	25.0¢	--	1.0¢	4.3¢.to 29.3¢
Purchased: (at \$2.99/doz includes lids)	24.9¢	0.0¢	0.0¢	25.0	--	1.0¢	25.9¢ to 50.9¢
Green beans (1 bushel at \$6.00 yielded 16 quarts)							
On hand:	0.0¢	3.3¢ (at 39¢/doz)	0.0¢	37.5¢	--	0.6¢	3.9¢ to 41.4¢
Purchased: (at \$2.99/doz includes lids)	24.9¢	0.0¢	0.0¢	37.5¢	--	0.6¢	25.5¢ to 63.0¢

¹ Cost in Ithaca, N.Y., 1974 growing season.

Source: Klippstein, R. B., and Wallace, E. *Actual Costs of Home Food Preservation*. Division of Nutritional Sciences, Coop. Ext. Serv., Cornell Univ. 1975.

agree that capital costs (tools for gardening and equipment for canning) will not apply to some home gardeners and canners, will apply in part to others, and will apply in full to still others. They have computed cost totals, therefore, for each of two products, green beans and tomatoes. The total cost per quart for canning green beans, in the summer of 1975 was \$1.21 when total capital costs were assigned to the first year's canning operation, \$0.42 when the capital costs were amortized over 20 years, and \$0.37 if there were no capital costs. The corresponding costs for canning tomatoes were \$0.74, \$0.22, and \$0.19.

Wishnetsky and Cash believe that the true cost lies somewhere between the upper and lower values. They base their data on the arbitrary assumption that a typical family puts up 180 quarts of food per season. They point out that not all harvested produce will be usable. Food lost through spoilage or given away cannot be ignored as an additional cost factor that raises the net cost per bushel for the home gardener. They suggest there should be no problem in making corrections to compensate for local prices or for variations in yield, where they are known to exist. Corrections for variations in total jars canned per season can also be made without difficulty. They conclude:

"Superior quality (compared to commercially-canned) that is attainable for some home gardeners and home canners is an intangible that the researchers made no attempt to quantify. Likewise, the cost of labor was ignored. If it were to be included at the typical manual labor rate, there would be little likelihood for any cost saving for any home-gardening/home-canning operation. It might be of interest, however, after computing the home-gardening/home-canning cost for a given commodity (under given, local conditions), to compare that cost with the average price of comparable, commercially-canned material over the next 12 months, to calculate the cost saving (if any) and then divide that figure by the number of hours of labor expended. The figure thus arrived at will represent the \$/hour 'earned' by that individual for his labor. Then the question can be posed, 'Was it worth it?'"⁵

⁵ Wishnetsky, T., and Cash, J. *Cost of Home Gardening and Canning Green Beans and Tomatoes*. Michigan State Univ. 1975.

In comparing the cost of home-canned foods with commercially canned ones, some differences were found by the Cornell researchers (table 4). The greatest savings from time spent was in canning tomatoes. This documents an earlier assumption that home canning provides substantial savings if produce is homegrown and jars and equipment are available from previous years. It points out that there are only small savings if jars and produce have to be purchased. The savings are further reduced if commercially canned foods can be bought in case lots at special discounted prices.

The home canners may wish to consider several other factors:

- Adequate space for storage. Food may freeze and jars burst, resulting in loss of both jar and food. Overheated storage space lowers the quality of the food. Jars may be accidentally broken if stored in the living areas of the house.
- Creativity in canning and canning without exact instructions may result in food waste and family illness due to food spoilage.
- Home-canned foods should be boiled 10 minutes or more, unless the canner is absolutely sure of the method.
- Some foods (for example, fresh carrots) are available year round at reasonable cost.
- Home-canned tomatoes or juice is far more expensive as a source of vitamin C than commercially canned or frozen orange juice. When canning supplies and freezer space are limited, canners should consider carefully the nutritional value of foods available for preserving.
- It is economical to can and freeze only the amount that can be used in a reasonable length of time.

Canning is probably the most economical and practical method of preserving food in the home. Home canning can provide a great feeling of personal accomplishment; it can bring family members together in creative activity; it provides security in having food within arm's reach; it offers a supply of food prepared according to family preferences and special dietary needs.

The most economical preservation method depends on that family's eating habits. You can't save money by canning green beans when

your family only likes frozen ones. You can't save money by growing a garden and canning

and freezing food unless someone takes the responsibility for getting the work done.

Table 4. Comparison of costs of home and commercially canned foods
(Quart of canned product)

Source of jars	Source of produce	Cost	
		Home canned ¹	Store bought ²
Peaches			
On hand	Gift	20.5¢	
Do	Bought	66.8¢	
Purchased	Gift	44.2¢	94¢ to \$1.10
Do	Bought	90.5¢	
Tomatoes			
On hand	Gift	4.3¢	
Do	Bought	29.3¢	
Purchased	Gift	25.9¢	64¢ to 90¢
Do	Bought	50.9¢	
Green Beans			
On hand	Gift	3.9¢	
Do	Bought	41.4¢	
Purchased	Gift	25.5¢	62¢ to 78¢
Do	Bought	63.0¢	

¹ Using electricity.

² April 1975, Ithaca, N.Y.

Source: Klippstein, R. B., and Wallace, E. *Actual Costs of Home Food Preservation*. Division of Nutritional Sciences, Coop. Ext. Serv., Cornell Univ. 1975.

AMENDMENTS TO REAL ESTATE SETTLEMENT PROCEDURES ACT

The Real Estate Settlement Procedures Act of 1974, which became effective June 20, 1975, has been amended as of January 2, 1976. The requirement for disclosure of settlement costs 12 days before closing has been repealed. Instead, a new section was added to the act, requiring that the settlement statement be made available to the borrower one business

day before settlement. The original legislation also was amended to repeal the requirement that the statement of settlement costs (Uniform Settlement Statement) contain Truth in Lending information, and the requirement that the previous selling price of existing real property be disclosed. Implementation of these new regulations will take place June 30, 1976.

HOW HOUSEHOLDS USE ENERGY¹

by Dorothy K. Newman and Dawn Day²

Being patriotic today now includes saving energy. Energy shortages and pollution from excessive energy use are the subject of heightened notice in the media and by all levels of Government. This article explores just how households use energy, and the limits and potentials for energy conservation.

The information on how American households use energy is based in part on two national sample surveys: (1) A survey of households, and (2) a survey of the electric and natural gas utilities that serve them. The first survey found out about the energy-using characteristics of the households themselves and of their dwellings in the spring of 1973. In the second, utilities (after authorization from the households) provided the actual amount and cost of the electricity and natural gas their customers used in a 12-month period of 1972-73.

The two sets of information—from households and their utilities directly—made it possible to match the exact amount and cost of electricity and natural gas used with each household's characteristics and the characteristics of their home. Answers from the households also gave the basis for getting information about car and gasoline use.

The work was done in the Washington Center for Metropolitan Studies with funds from the Ford Foundation.³

The Household as Energy Consumer

The main findings are repeated in virtually every area into which the investigation reached. They showed, without doubt, that the more money you have, the more energy you use at

home and in your automobile.⁴ This is regardless of any other condition—climate; how and how far you commute to work; the size of your house; your age; number in the household; and whether your house is protected from the weather by insulation. Paradoxically, the better off you are, the more likely you are to have equipment that saves energy and a house and equipment that use a lot of energy.

Another key finding is that almost all households have a limited choice, especially about the most energy-related features of their house—the design, the furnace, and the water heater. The structure and built-in equipment are there when most households buy or rent a dwelling. If you judge energy use on the basis of the number of major appliances in a home, as many do, you would be right, but only because the presence or absence of major appliances is a key indicator of total energy consumption and is linked chiefly with income. Appliances, which are usually bought separately and are not built in, do not use much energy by themselves. Therefore, what one chooses and buys separately is less important to the energy consumed at home than the basic features of the structure, about which a household has had little to say.

Limited choice is reflected also in the degree to which households use automobiles. Whether poor or rich, few workers felt they had a choice in how they commuted to their jobs. Either they used a car or had a time-consuming

¹ This article is condensed from a paper given at the National Agricultural Outlook Conference in November 1975. The complete paper may be ordered from the Consumer and Food Economics Institute (see page 2 of cover for address).

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Views expressed are those of the authors.

³ Additional results from this study are available in *The American Energy Consumer*, by D. K. Newman and D. Day. Massachusetts: Ballinger, 1975.

⁴ Four income groups are used in this analysis: Poor, lower middle, upper middle, and well off. Families and individuals were defined as poor if their incomes fell below certain levels. The levels varied with size of the family and were based on the U.S. Government's definition of poor and near poor for 1972. In our study, the average income of poor households was \$2,500.

The lower middle income group includes all the non-poor whose income was under \$12,000 in 1972. The average income of lower middle income households was about \$8,000. The upper middle income group includes those with incomes between \$12,000 and \$15,999 in 1972; their average income was \$14,000. The well off are those with incomes of over \$16,000; their average income was \$24,500. The poor, upper middle income, and well off income groups each comprise about a fifth of all households, and the lower middle income group comprises about two-fifths.

struggle with poorly routed public transportation. Therefore, almost all the chief breadwinners in American families use a car to get to work.

Lack of choice reaches far and deep. Exclusionary housing patterns affecting lower income and black households leave them even less choice than others in the dwellings they live in, and therefore, in the energy-using features of their homes. Automobiles use more energy and are more expensive. The 1973-74 price increases, during the energy crisis, were greatest for compacts that cost and weighed the least. Those who produce homes and the facilities in them that determine how much energy people use have been making their products more energy consuming and costly. For instance, a frostless refrigerator uses two-thirds more energy than a regular refrigerator and today's regular kind uses over twice as much energy as the models sold in 1950.

The costs are increasingly burdensome on those at the lower end of the income range because they have fewest options. They are least able to afford the sharply rising prices for every energy source. In addition, both electricity and natural gas prices are ordinarily higher the less you use. Poor and low-income households, who use the least amount, pay more per unit (that is, per million Btu's) than the well off.

The inevitable conclusion is that households may be able to play only a modest role in energy conservation by themselves. Possible exceptions are the well off who have most options. Even they are locked into a given housing stock and certain transportation alternatives. Conservation then, is everybody's business if the public is to save energy. To a large extent the buck passes to commerce and industry; to State and local governments that can modify land use, zoning, and building-permit regulations; to various arms of the Federal Government that administer or enforce housing laws and utility and environmental regulations; and, finally to the Congress. The Congress could enact legislation that would remove some large remaining roadblocks that hinder free choice and energy-saving alternatives in housing and transportation. If households had more choice, they would save energy. We found that people at all income levels were aware of how to save.

The dwelling. The basic level of household energy use for heating, which accounts for most of every family's energy consumption, is determined by climate and the structure of the dwelling itself. Once location is decided, climate is outside the household's control. The dwelling structure is usually outside the family's control as well. Most people live in homes built long before they moved in. Even families buying a new house have little to say about the design. Their new home is likely to be one of a dozen or more mass-produced for sale by a developer who uses a set of master blueprints rather than a home the family built for themselves.

An important principle of energy conservation is that the more a dwelling is protected from the weather, the less energy it needs for heating. Thus—all other factors being equal—an apartment uses less energy than a rowhouse (or townhouse) of the same size, a rowhouse uses less than a semidetached house, and a semidetached house uses less than a free-standing single-family home.

The type of heating system makes a difference. An electrically heated home requires about twice as much fuel per unit of heat as a similar gas- or oil-heated home. The presence of at least one thermostat or radiator valve is important to permit the family to control room temperature.

Any openings in a building, such as doors or windows, are places for heat to escape in the winter or to enter in the summer. The type of window also makes a difference. The most common type of window—double hung—is the most energy conserving. Casement and sliding windows are less energy conserving since they have more crevices and leaking areas for hot or cold air to move in or out. Wood frames provide better protection than metal; double-glazed (thermopane) glass gives more protection than conventional (single-glazed) glass. The larger the window, the more heat is likely to be lost. Storm windows, storm doors, and weatherstripping can reduce heat loss.

Most of these structural characteristics that affect energy use are determined at the time of construction and may be impossible, or at least difficult and expensive, to change. This is true of square feet of floor space, size, shape, number of windows and doors, degree of insulation, and type of roof and foundation.

In the face of these facts, analyses of data from the U.S. Bureau of the Census show a distinct trend toward more energy-using characteristics in the design of American dwellings. For instance, the single-family home—the most energy-using type of structure—has become more common, rising from housing two-thirds of all American households in 1940 to three-fourths by 1973.

The new one-family houses being built and added to the housing supply each year have an increasing number and proportion of energy-using features. More homes are being built with electric heating, central air-conditioning, and slab foundation. The trends are sharp.

Even though new housing is a small percentage of the total housing stock, it is an important part because it will remain and influence household energy use for years.

Home improvements are possible, but the most energy saving—such as installation of storm windows and insulation—are expensive. The initial cost is beyond the ability of poor and many lower middle-income households to pay out directly, and credit costs are high. For many households, installation depends on the landlord. The poor and lower middle-income households have more windows that are without storm sash in their homes. These households are also the most likely to be without insulation. Further, if you heat with natural gas, as most people do, a storm window will pay for itself in as few as 10 years only in very cold climates (table 1).

Although families may not be able to afford storm windows or to save money by installing them, the energy savings possible are high and could be very important to the country. A home with the average number of windows (12) would conserve over 20 million Btu's of natural gas in a year. This is the equivalent of 13 percent of the natural gas used by the average family that uses natural gas for heating.

Lifestyle—The family's use of the home. While the structure of the dwelling determines a basic level of energy use, the family's style of living can make some difference. For example, a family can influence its own energy use by turning down the thermostat in winter or turning off the natural gas pilot light in summer.

The survey findings show that households generally tended to keep their winter home temperature between 70 and 72 degrees during

the day and below 70 at night. These temperatures were reported in the spring of 1973, even before the Government urged us to "dial down."

Turning off the pilot light of a natural-gas furnace during the summer is a good way to save energy. In the summer before the energy crisis of 1973-74, about 13 million households saved energy by having their pilot lights turned off in the summer. Another 25 million left their furnace pilot lights on. If these 25 million households had turned off their furnace pilot lights, the country would have saved 58 trillion Btu's of energy, about 1 percent of the total natural gas households consumed in 1972-73. The dollar savings per household would have been about \$2.70 and is about \$5.00 today.

These low savings are little incentive, especially when you have to call the gas company to turn the pilot light off in the spring and light it in the fall. If the gas company charges the household directly for this, and many do, the charge could wipe out the dollar savings.

Cooking and refrigerating appliances account for about 6 percent of all personal energy consumption. Other appliances and lighting use an additional 9 percent—15 percent in all.

How much energy an appliance uses in a given year depends on how much energy it takes to run the appliance per second or per hour and how much the appliance is used. For example, the average wattage (energy per second) of a microwave oven is 1,450. This is over four times the wattage of a 12-cubic-foot, frost-free refrigerator. Yet, over a year, the oven uses less than a fifth as much energy as the refrigerator because the refrigerator is plugged in all the time while the microwave oven is very seldom in actual use.

Most electrical and gas appliances on the market have increased in energy use per appliance since the fifties. For instance, in 1950 a prosperous homeowner could buy something called a home freezer cabinet (using 620 kWh per year). By 1959 the freezer was on the market (using 860 kWh per year). By 1969 the thing to buy, if budget permitted, was a frost-free freezer (using 1,761 kWh). The increase in size and convenience is undeniable. So is the increase in energy use (180 percent). Increases occurred elsewhere too. The room cooler (935 kWh) became the window air-conditioner (1,389 kWh). The wringer washer (45 kWh)

Table 1. Annual cost vs. savings for installing one storm window, two selected cities, December 1973¹

Years	Atlanta			Boston		
	Storm window cost	Natural gas cost savings		Storm window cost	Natural gas cost savings	
		Heating & air-condi- tioning	Heating only		Heating & air-condi- tioning	Heating only
	Dollars					
1	23.95	1.92	1.58	30.63	5.24	5.12
2	25.27	3.95	3.25	32.31	10.77	10.52
3	26.66	6.09	5.01	34.09	16.60	16.22
4	28.13	8.34	6.87	35.96	22.75	22.23
5	29.68	10.72	8.83	37.94	29.24	28.57
6	31.31	13.23	10.90	40.03	36.09	35.26
7	33.03	15.88	13.08	42.23	² 43.31	² 42.32
8	34.85	18.68	15.38	44.55	50.93	49.77
9	36.77	21.62	17.81	47.00	58.97	57.63
10	38.79	24.73	20.37	49.59	67.45	65.92
11	40.92	28.01	23.07	52.32	76.40	74.67
12	43.17	31.47	25.92	55.20	85.84	83.90
13	45.54	35.12	28.93	58.24	95.80	93.63
14	48.04	38.97	32.10	61.44	106.31	103.90
15	50.68	43.03	35.45	64.82	117.40	114.73
16	53.47	47.32	38.98	68.39	129.10	126.16
17	56.41	51.84	42.70	72.15	141.44	138.22
18	59.51	56.61	46.63	76.12	154.46	150.94
19	62.78	61.64	50.77	80.31	168.20	164.36
20 ³	66.23	² 66.95	55.14	84.73	182.69	178.52

¹ December 1973 prices were used for storm windows and natural gas.

² The year when the storm window pays for itself.

³ Not computed after 20 years.

Source: Newman, D. K., and Day, D. *American Energy Consumer*. Massachusetts: Ballinger, 1975, (table 3-12, p. 46).

Derived using the following method: Each storm window is assumed to be 15 square feet, the usual size of a double-hung window. Storm-window prices are for medium-priced aluminum sash sold at retail and installed in each of the cities by Sears, Roebuck and Company. Natural gas prices are as of December 1973, from the U.S. Bureau of Labor Statistics. Storm window costs and energy cost savings are computed assuming a 5.5 percent interest rate, compounded annually.

became the automatic clothes washer (103 kWh).

Not every household has all types of appliances. Refrigerators, stoves, and television sets are most common—almost all households have them. Three-fourths of all households have clothes washers too, either wringer or automatic. About half of all households have clothes dryers. A third have food freezers. Substantial differences exist between households in appliance ownership, by income class.

Consumers may exercise considerable discretion in buying appliances and water heaters since the equipment is often not part of the structure. Even here choice is limited. First, a family may not be able to afford the item. For instance, a family trying to make ends meet would have little incentive to replace an electric water heater with a more energy-conserving gas water heater.

A customer is limited by what is available in the stores. For example, virtually all refrigerators now sold at retail are the more energy-intensive frost-free variety. Bearing this out, all refrigerators priced for the Consumer Price Index of the Bureau of Labor Statistics are frost free.

The Energy Gap

Now that Americans have learned that fossil fuel energy, like all natural resources, is finite, they must consider distribution and pricing policies to give all Americans a fair share of energy. Present maldistribution must be recognized, as well as the possibility of present and future shortages.

The poor use less energy; they pay higher prices for the energy they must have; and they, more than any other group of Americans, suffer from exposure to the noxious byproducts of energy consumption and production.

Energy used by the poor is almost entirely for essentials—space and water heating, cooking, food refrigeration, and lighting.

When fuel supplies are limited and increasingly expensive, the wealthy can buy as much as they want if price is the only obstacle. The poor, on the other hand, are inevitably deprived by rising costs. They are forced to forego some measure of pleasant or necessary life support—if not in heat and light, or in gasoline for necessary transportation, then in the loss of amenities.

In 1972-73 poor households used an average of 207 million Btu's of natural gas, electricity, and gasoline. The well off used more than twice as much. The middle-income groups fell between. The same staircase pattern occurs for each fuel separately. The incline of the steps differs, however.

As income rises, the increase in natural gas consumption is gradual; the increase in electricity is intermediate; and the increase in gasoline is sharp. The well off use almost one and one-half as much natural gas as the poor, over two and one-fourth as much electricity, and over five times as much gasoline. The well-off use more of each than the middle-income groups, but the differences are not as great.

Natural gas is used primarily for heating and cooking. It seems reasonable that, for these necessities, the less advantaged cannot reduce consumption much below that of the well off. Conversely, there would seem to be little reason for the well off to increase their consumption greatly.

Electricity is used mainly in appliances and lighting, and this is part luxury and part necessity. Here, as with natural gas, there seems to be a point when the well off prefer to spend their money for things other than electricity-using devices.

Gasoline is truly the fuel of both necessity and pleasure. Gasoline may be necessary for shopping and commuting to work, but many gallons of gasoline are consumed for family vacations, weekend excursions, second cars, extra large cars, and so on. It is for these reasons that the well off use more than five times as much gasoline as the poor and more than twice as much as the lower middle-income group.

The poor and the lower middle-income households use less fuel for the essentials of heating, lighting, and cooking because they are forced to be thrifty and because their homes are modest. They are more likely to live in apartments or homes with only a few rooms and a few windows (table 2).

Virtually all poor households have a refrigerator, a stove, and a television. The refrigerator and stove are unquestionably necessities. By today's American standards, television provides an economical form of entertainment. With any particular appliance, the poor are less likely to have the more energy-intensive model.

Table 2. *Climate and housing characteristics, by income, 1973*

(Percent of households)

Climate and structural characteristics	Poor	Lower middle	Upper middle	Well-off
All households	100	100	100	100
Climate under 3,500 heating degree days	41	33	29	25
Apartment	32	26	13	8
Less than 5 rooms	47	35	18	8
Living room less than 200 sq ft ..	62	55	36	29
Less than 15 windows	82	73	67	45
No picture window	70	56	38	29
Some storm windows	31	49	54	63
Protected doors ^{1 2}	41	53	58	70
Basement in single-family homes ..	31	45	52	61
Insulation in single-family homes ²	41	78	86	94

¹ Includes entrances with storm doors and doors opening on to apartment hallways and other heated areas.

² Excludes unknowns.

Source: Newman, D. K., and Day, D. *American Energy Consumer*. Massachusetts: Ballinger, 1975, (table 5-5, p. 94).

For example, the poor are less likely than other households to have a color TV or frost-free refrigerator. Aside from the refrigerator, stove, and TV, poor households are much less likely than others to have and enjoy the convenience of major appliances.

The energy gap is greatest in gasoline use. Almost 50 percent of all poor households and over 15 percent of all lower middle-income households have no car. The well off have more than one car.

Poor and lower middle-income households with cars use less gasoline because they go fewer places and because their cars get better gasoline mileage. They get better mileage because these groups own the older cars that tend to weigh less than newer models and are without

such gasoline-consuming extras as air-conditioning and power steering.

These facts are helpful in shaping energy policy. They establish by whom and where household energy conservation is practiced. A family's ability to cut back energy use is limited by the size of the home and its location, and basic appliance and transportation needs. Only over the long haul can these be exchanged for more energy-efficient living conditions.

In the meantime, when the focus is on ultra-high energy use today and on energy conservation, the spotlight needs to be on the well off. Well-off households use the most energy and have the present resources to make energy-conserving improvements.

THE IMPACT OF INFLATION ON FAMILIES¹

by Nancy S. Barrett and Anita Driscoll²
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Inflation is a very general term that refers to an increase in some weighted average of the prices of goods and services produced or consumed in an economy. To arrive at a measure of inflation that has economywide significance, individual price changes must be weighted according to the importance of the commodities and services in the economy: Food price changes, for instance, have a larger weight than price changes for pianos.

There are various measures of inflation, the most commonly cited ones being the Consumer Price Index, the Wholesale Price Index, and the Gross National Product (GNP) deflator. Each of these price indexes encompasses a different mix of goods and services and applies different weights to price changes. It is impossible, however, to gage the actual increase in living costs for any particular family on the basis of any readily available price index, since the composition of purchases for any particular family will not be identical to the weights assumed in constructing statistical price indices. The consumption pattern used to construct the Consumer Price Index (revised in 1964), for instance, is based on a 1960-61 expenditure survey of urban wage earners and clerical workers. Its applicability to broader segments of the population (or later time periods) is certainly questionable. For instance, when food prices rise, families that allot a greater proportion of their budget to food than the families surveyed will experience a greater increase in living costs than is shown by the Consumer Price Index.

Not only are there various ways to measure inflation, but there are many different channels through which the inflationary process is transmitted. Differences in the underlying causes of inflation, even more than measurement prob-

lems, can affect the way inflation impacts on the family.

EXCESS-DEMAND INFLATION

Consider the case of an inflation triggered by an excessive demand for labor. This type of inflation occurred in the late sixties in the economic expansion associated with the Vietnam buildup. Although prices increased throughout the economy, labor was in short supply relative to some other resources. In the long run, firms could substitute capital and other materials for labor. In the short run, however, not much substitution took place, and real wages—particularly in the industrial and service sectors—rose relative to real GNP. This meant a real increase in the spending power of the household sector.

From a macroeconomic point of view, inflation caused by an excess demand for labor has an *expansionary* effect on the economy. The process feeds on itself since increased household purchasing power and spending increases the demand for goods and services, and hence the demand for labor, still further.

A 1970 study by two University of Wisconsin economists, Hollister and Palmer, investigated the effect of excess-demand inflation on the distribution of income within the household sector.³ They concluded that the poor may benefit as much as other wage earners since improved employment opportunities are available and transfer payments, such as social security and food stamps, tend to rise faster than prices in these periods. Further, erosion of wealth due to inflation affects the rich more than the poor, so that inflation tends to equalize wealth.

To the extent that an excess-demand inflation redistributes income to wage earners and the poor and redistributes wealth, this type of inflation could potentially reduce inequality. However, the distributional impact may vary with the skill level of wage earners, with some highly skilled workers gaining most, so that the

¹ This article is a condensed version of a paper presented at the National Agricultural Outlook Conference in November 1975. The complete paper may be ordered (see page 2 of cover for address).

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³ Hollister, R. G., and Palmer, J. L. The impact of inflation on the poor. In Boulding and Pfaff (eds.), *Redistribution of the Rich and Poor: The Grants Economics of Income Redistribution*. California: Wadsworth, 1972.

overall distributional consequences are very uncertain.

COMMODITY INFLATION

More recently, a different type of inflationary process has emerged with totally opposite consequences both for overall household spending power and for the distribution of incomes within the household sector. Inflation beginning in 1972 was triggered primarily by relative increases in food and energy prices. From January 1973 to July 1975, food prices rose some 37 percent, while the nonfood component of the Consumer Price Index rose 23.6 percent. Hourly compensation increased 20.1 percent over the period, while real spendable weekly earnings outside agriculture declined 5.6 percent. Further, the price of petroleum increased over 400 percent, with other energy prices also increasing. The ripple effects of these developments were not inconsequential as wage earners and business managers attempted to recoup their declining real incomes through higher wages and profits. A highly restrictive fiscal and monetary policy that reinforced the erosion of real spending power in the private sector resulted in a severe recession that greatly restricted the ability of workers to maintain their real earnings and the ability of firms to increase prices to restore their profits. Unemployment reached 9 percent and industrial capacity utilization fell by 63 percent.

Effect on Overall Household Spending

From a macroeconomic perspective, higher food and energy prices have a *deflationary* effect on economic activity since they reduce the real spending power of the household sector, producing a real cutback in the demand for goods and services. The costs of higher food prices for American households since 1973 are estimated to be about \$55 billion. Higher energy prices added \$40 billion to the fuel bills of Americans. Weighed against a GNP of around \$1,300 billion in 1973, this represents a sizable deflation in a real purchasing power for the economy as a whole.⁴

⁴ A simple way to calculate the effect of higher food prices on the household sector is to observe that food represents about 25 percent of the average household budget. Thus, a 10-percent rise in food prices reduces consumer real incomes by 2.5 percent.

Coupled with this overall reduction in spending power are several major income transfers. Higher food prices, for instance, transfer incomes from nonfarm to farm households. Farm families, however, also must pay higher prices for the food they eat. Further, farm households typically spend a smaller percentage of their incomes than urban households. The net effect is a decline in the overall spending in the economy.

Higher petroleum prices transfer income both to OPEC (Organization of Petroleum Exporting Countries) nations abroad and to domestic oil companies. In the first case, there is a net drain in purchasing power. In the second case, whether an increase in oil company profits deflates overall spending depends in large measure on the uses to which the proceeds are put. The initial impact of higher oil prices since 1973 has been a sizable reduction in household's purchasing power. It is unlikely that the spending propensities of the oil companies from their profits are as high as those of families from their incomes.

Effect on Various Population Groups

Several factors should be considered when assessing the effect of commodity inflation on the distribution of incomes within the household sector.

- The poor spend a larger proportion of their incomes on food, gasoline, and home heating fuels than do affluent families and, therefore, have experienced greater increases in their living costs for these items.⁵
- The unskilled, disadvantaged worker is more likely to become unemployed in a recession than the skilled, high-income worker.
- Some categories of workers are better able than others to obtain cost-of-living adjustments in their incomes.
- As farm prices rise, the gains go primarily to high-income farmers, with low-income farmers experiencing little improvement in their real incomes.

⁵ Higher energy costs result in higher prices throughout the economy. The higher food prices thus generated fall more heavily on the poor, yet the overall effect on the family budget is indeterminate except for the specific cases of gasoline and home-heating fuels.

- Asset holders experience erosions of their wealth in an inflation while debtors' real obligations fall.

The first four factors—income effects—suggest that higher food and fuel prices produce an inflationary environment that worsens the inequality of income distribution within the household sector, with the burden falling disproportionately on the poor. The last factor—wealth effect—works in the other direction.

Regressive effects on real income.⁶ The table provides estimates of an average household's total budget spent for food at different income levels in 1972 and 1974. The lowest income group spends over 40 percent of its income on food while the highest income group spends about 10 percent on food. With food prices rising 37 percent from January 1973 to July 1975, the burden falls more heavily on the poor. For example, if the poor spend two-fifths of their budget on food, and food prices rise 37 percent combined with a 24 percent rise in all other items, the weighted impact on the poor becomes $(2/5 \times 37) + (3/5 \times 24)$, or 29 percent. In contrast, the affluent spend one-tenth of their budget on food. The weighted impact of the price rises on the affluent becomes 25 percent. The poor are also at a major disadvantage in that their consumption is limited to begin with so that a shift to less costly items is not always possible. This is due in part to the disappearance from the market of many simple, less expensive foods.

A similar analysis can be done for gasoline expenditures by income group as this is another component of the budget that has shown dramatic price increases. The poor, as an income group, spent some 5 percent of their average weekly income on gasoline during the period July 1972 to June 1973. The affluent (average income of \$17,749) spent under 3 percent of their weekly income on gasoline during the same period. As gasoline prices have continued to increase since that time, it becomes obvious that these expenditures are falling heavily on the poor. In addition, low-income households spend an average of more than 11

*Food expenditure as a fraction of income
by income decile for 1972 and 1974*

Income decile	Food/income	
	1972	1974
	<i>Percent</i>	
Lowest	40.1	46.6
Second	31.1	32.7
Third	25.1	28.0
Fourth	21.2	22.4
Fifth	19.1	20.8
Sixth	17.5	18.9
Seventh	15.8	17.6
Eighth	14.0	14.9
Ninth	13.1	14.3
Highest	10.8	11.4
Average	20.7	22.8

Source: Draft chapter, vol. 4, *Five Thousand Families: Patterns of Economic Progress*, Institute for Social Research, University of Michigan, 1975.

percent of their income on natural gas and electricity, compared with less than 2 percent for households with annual incomes over \$16,000.

Thus, an increase in prices of food, gasoline, and home-heating fuel affects the poor proportionately more than other groups in society. Yet, recession cannot be viewed as a trade-off to ease the burden of price increases on this group because it is the poor—the unskilled, disadvantaged worker—that are more likely to be unemployed in a recession. By race, blacks are hurt more by the increase in unemployment (as measured by the absolute increase in their unemployment rate). Blacks also fall more heavily into the category classified as poor. By sex and age, women and teenagers experienced greater increases in their unemployment rates also. By occupation, blue-collar workers, particularly operatives and nonfarm laborers suffer the most unemployment. These are the unskilled workers who fall heavily into the category of “poor.” By industry, the burden of unemployment fell heaviest on construction and manufacturing, areas that are heavily unionized but where nonunion jobs are low paying and insecure.

Not only do the poor receive a disproportionate share of the burden of both commodity inflation and unemployment, but many

⁶ Real income is purchasing power of income; for example, money income adjusted to reflect price changes in the goods and services purchased by the family.

poor families are less able than others in the population to obtain cost-of-living adjustments—such as escalator clauses in collective bargaining contracts—in their incomes.

Escalator clauses have played a significant role in wage determination in union contracts since World War II, but they have operated in a cyclical fashion—being very common during periods of inflationary expectations and less common during periods of stable prices. The seventies have shown an increase in escalator clauses, but the clauses still cover a small fraction of the American work force. For example, in 1974 the U.S. labor force numbered 91.1 million persons. Average employment for the year in nonagricultural establishments (including government) was 78.3 million. Of this number, only 7.7 million or some 9.8 percent were covered by escalator clauses. The average increase for workers covered by escalator clauses has been considerably less in recent years than the increase in prices. During 1974 the Consumer Price Index (CPI) rose by 12.2 percent. Some 31 percent of the workers covered by escalator clauses (mostly in trucking) received less than 2 percent by way of escalator wage increases. Of the covered workers, 14 percent received wage increases between 8 and 9 percent, 29 percent received increases between 9 and 10 percent, and 7 percent (under 1 percent of the entire work force) received increases of 10 percent or more. Thus, escalation clauses do not offer widespread protection to the U.S. work force against the burden of higher prices.

The poor do benefit from cost-of-living adjustments, however, in cases where transfer payments are tied to the CPI. The main examples of these are social security payments and food stamps.

Food stamp bonus payments are tied to the food component of the CPI. Yet, the payment schedule is only revised every 6 months as an after-the-fact recognition of higher food prices. The interim excess expenditures are not made up nor is recognition given to anticipation of further food price increases. Further, food stamps do not always cover a family's total food bill since coverage is on a sliding scale that depends on income. Despite the rapid expansion of this program over the past few years, the Senate Select Committee on Nutrition and Human Needs has estimated that only 38 per-

cent of those eligible for food stamps are receiving them.

Thus, while the poor are hurt proportionately more by rising food prices, a third of this group is at least partly protected from the impact. Of the two-thirds remaining, it is probable that some are benefiting from other transfer payments that cover some of the burden of higher food prices. Yet, these figures indicate that the burden falling on the poor is still very great.

Higher food prices reduce real incomes in the nonfarm economy, but increase incomes in the farm sector. Total farm income (net of expenses) increased 43.4 percent between 1972 and 1974. Within the farm sector, however, these gains were not distributed evenly. It is not the small single-family farm that benefited, but rather some 35 percent of this income went to commercial farms with over \$100,000 in sales, which make up only 4 percent of all farms.⁷

Thus, while farmers gain at the expense of the consumer, small farmers gain very little at all while large farmers make more substantial gains. The same might be said for the gains of large oil companies—both domestic and foreign—when oil prices rise.

Wealth effects. While the income transfers associated with a commodity price inflation tend to be regressive, the wealth effects act in the opposite direction. Higher prices erode the value of fixed value assets and also reduce the real value of debts. The recession also produced a sharp decline in equity prices, contributing to a decline in the market value of paper assets. Property that is not fixed in value, however, like real estate, will not be affected and may even gain in value relative to the increase in consumer prices.

These wealth effects most likely took their heaviest fall on upper income families. The very poor would not be likely to feel much effect in either direction, since they are neither asset-holders nor debtors (not being good credit risks). The distributional impact among middle-income families is less certain, since the balance sheets of families in the middle-income ranges vary widely with respect to indebtedness, net worth, and the composition of assets.

⁷U.S. Department of Agriculture, Economic Research Service, *Farm Income Statistics*, July 1975.

SOME NEW USDA PUBLICATIONS

(Please give your ZIP code in your return address when you order these.)

The following are for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402:

- NEW LIFE FOR OLD DWELLINGS: APPRAISAL AND REHABILITATION. AH 481. December 1975. \$1.70.
- NUTRITIVE VALUE OF AMERICAN FOODS—IN COMMON UNITS. AH 456. November 1975. \$5.15.
- THAT WE MAY EAT. 1975 Yearbook of Agriculture. \$7.30 (hardback).

Single copies of the following are available free from the U.S. Department of Agriculture. Please address your request to the office indicated.

From Office of Communication, Washington, D.C. 20250:

- GROWING BLACKBERRIES. FB 2160. Revised October 1975.
- CONTROLLING TOMATO DISEASES. FB 2200. Revised September 1975.
- HOW TO MAKE JELLIES, JAMS, AND PRESERVES AT HOME. G 56. Revised December 1975.
- GROWING FLOWERING ANNUALS. G 91. Revised October 1975.
- HOMEMAKERS' FOOD AND NUTRITION KNOWLEDGE, PRACTICES, AND OPINIONS. HERR 39. November 1975.

From Economic Research Service, Division of Information, Washington, D.C. 20250:

- FARM POPULATION ESTIMATES FOR 1974. AER 319. December 1975.

From Food and Nutrition Service, Information Division, Washington, D.C. 20250:

- FOOD STORAGE GUIDE FOR SCHOOLS AND INSTITUTIONS. PA 403. Revised November 1975.

From Statistical Reporting Service, Information Division, Washington, D.C. 20250:

- SCOPE AND METHODS OF THE STATISTICAL REPORTING SERVICE. M 1308. July 1975.

THE HIRED FARM WORKING FORCE OF 1974

In 1974, there were approximately 2.7 million persons 14 years of age and over who did farm wagework at some time during the year. The hired farm working force has changed little over the past 3 years. Thus, the annual employment of farmworkers appears to have become stable after the long downward trend of previous years.

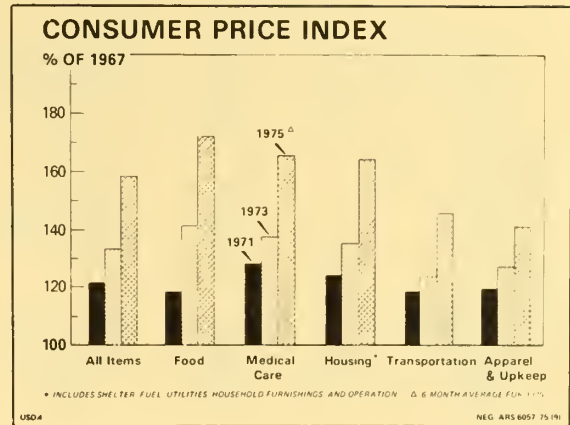
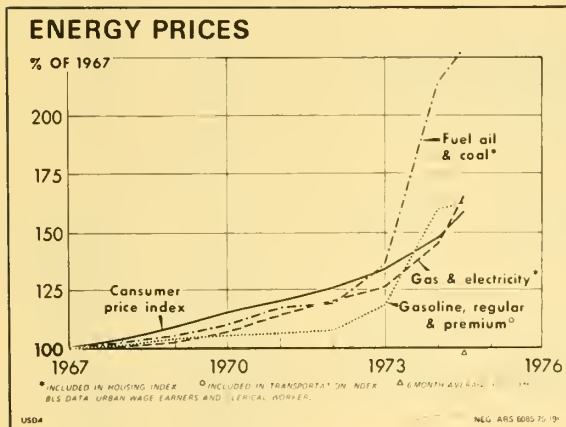
Generally, hired farm wageworkers were young (median age 23 years), white (83 percent), male (79 percent), and resided in non-farm places (76 percent). They earned an average of \$1,447 in annual cash wages, or \$16.60 per day for 87 days of farm wagework.

Approximately 1.6 million workers were employed solely in farmwork during the year; the remaining 1.1 million performed both farm and nonfarm work.

About 209,000 (8 percent) of the total were migratory farmworkers in 1974, the third consecutive year of increase. Annual earnings for these workers averaged \$1,688, or \$21.60 per day for 78 days of farmwork. Of all migrants 49 percent were only employed in farmwork during the year.

Source: U.S. Department of Agriculture, Economic Research Service, *The Hired Farm Working Force of 1974—A Statistical Report*, AER 297, July 1975.

SOME NEW USDA CHARTS¹



¹Black and white photographic prints or colored slides of charts may be ordered from Photography Division, Office of Communication, U.S. Department of Agriculture, Washington, D.C. 20250. Slides are 30

cents each and prints are \$2.70 (8" X 10" or less). When ordering, please give negative number, title of chart, and, if a print, the size desired.

TO RENT OR BUY

The wide variety of choice in today's shelter market, the mobility of American families, and the opportunities for returns on savings in investments other than housing have all contributed to the complexity of decisions on whether to rent or to buy one's shelter needs. As a result, a sound decision cannot be based on a simple comparison of the monthly costs for owning and renting. A bulletin prepared in 1974 by Raymond W. Gieseman of the Bureau of Labor Statistics, U.S. Department of Labor, entitled "Rent or Buy: Evaluating Alternatives in the Shelter Market," describes a method of analyzing the financial costs and benefits of owning a home compared with renting in combination with a program of regular monthly savings over a specified period of time. The bulletin (No. 1823) may be ordered for 80 cents from either the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (stock No. 029-001-01341-8), or from Consumer Information, Public Documents Distribution Center, Pueblo, Colo. 81009 (item No. 245C). A paper condensed

from the bulletin was presented by the author at the National Agricultural Outlook Conference in December 1975. This paper is available from the Consumer and Food Economics Institute (see page 2 of cover for address).

The bulletin gives step-by-step calculations on how to determine the monthly rental rate which would permit the renter to equal the gains from ownership. The method assumes that the renter invests the money that would otherwise be required initially to purchase a house—such as a downpayment and settlement costs—and, in addition, follows a program of regular monthly saving. The estimate of the cost of owning a house includes the downpayment, settlement costs, the monthly mortgage payment, and other monthly outlays for real estate taxes, property insurance, maintenance and repairs, and utilities. The potential tax saving through the deduction of interest is considered. An estimate is made of the net proceeds from the sale of the house after a given number of years.

COST OF FOOD AT HOME, U.S. AND REGIONS

Cost of food at home estimated for food plans at four cost levels, March 1976, U.S. average 1/

Sex-age groups	Cost for 1 week				Cost for 1 month			
	Thrifty plan Dollars	Low-cost plan Dollars	Moderate-cost plan Dollars	Liberal plan Dollars	Thrifty plan Dollars	Low-cost plan Dollars	Moderate-cost plan Dollars	Liberal plan Dollars
FAMILIES								
Family of 2: 2/								
20-54 years.....	22.10	28.90	36.30	43.70	96.10	125.30	157.30	189.40
55 years and over.....	19.80	25.60	31.80	38.20	85.80	110.90	137.70	165.10
Family of 4:								
Couple, 20-54 years and children--								
1-2 and 3-5 years.....	31.40	40.80	50.90	61.20	136.50	176.50	220.50	265.00
6-8 and 9-11 years.....	37.90	49.30	61.80	74.40	164.80	213.50	268.00	322.50
INDIVIDUALS 3/								
Child:								
7 months to 1 year.....	4.50	5.60	6.80	8.10	19.60	24.20	29.50	35.00
1-2 years.....	5.10	6.60	8.10	9.70	22.20	28.50	35.20	41.90
3-5 years.....	6.20	7.90	9.80	11.80	26.90	34.10	42.30	50.90
6-8 years.....	7.90	10.20	12.80	15.40	34.40	44.30	55.50	66.80
9-11 years.....	9.90	12.80	16.00	19.30	43.00	55.30	69.50	83.50
Male:								
12-14 years.....	10.60	13.60	17.10	20.50	46.00	59.00	73.90	88.80
15-19 years.....	11.70	15.00	18.80	22.70	50.50	65.10	81.60	98.30
20-54 years.....	11.10	14.60	18.40	22.20	48.20	63.10	79.70	96.30
55 years and over.....	9.80	12.80	15.90	19.20	42.60	55.30	68.90	83.00
Female:								
12-19 years.....	9.40	12.10	15.00	18.00	40.90	52.60	65.20	78.00
20-54 years.....	9.00	11.70	14.60	17.50	39.20	50.80	63.30	75.90
55 years and over.....	8.20	10.50	13.00	15.50	35.40	45.50	56.30	67.10
Pregnant.....	11.30	14.50	17.90	21.40	49.00	62.90	77.50	92.50
Nursing.....	12.00	15.40	19.20	22.90	52.10	66.80	83.00	99.10

1/ Assumes that food for all meals and snacks is purchased at the store and prepared at home. Estimates for each plan were computed from quantities of foods published in the Winter 1976 (thrifty plan) and Winter 1975 (low-cost, moderate-cost, and liberal plans) issues of *Family Economics Review*. The costs of the food plans were first estimated using prices paid in 1965-66 by households from USDA's Household Food Consumption Survey with food costs at four selected levels. These prices are updated by use of "Estimated Retail Food Prices by Cities" released monthly by the Bureau of Labor Statistics.

2/ 10 percent added for family size adjustment. See footnote 3.

3/ The costs given are for individuals in 4-person families. For individuals in other size families, the following adjustments are suggested: 1-person--add 20 percent; 2-person--add 10 percent; 3-person--add 5 percent; 5-or-6-person--subtract 5 percent; 7-or-more-person--subtract 10 percent.

*Cost of food at home estimated for food plans at three cost levels,
March 1976, Northeast Region 1/*

Sex-age groups	Cost for 1 week			Cost for 1 month		
	Low-cost plan	Moderate-cost plan	Liberal plan	Low-cost plan	Moderate-cost plan	Liberal plan
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
FAMILIES						
Family of 2: 2/						
20-54 years.....	30.60	39.30	47.30	132.80	170.20	205.20
55 years and over.....	27.10	34.30	41.20	117.40	148.80	178.80
Family of 4:						
Couple, 20-54 years and children--						
1-2 and 3-5 years.....	43.00	54.80	66.00	186.50	237.60	286.20
6-8 and 9-11 years....	51.90	66.50	80.10	225.30	288.30	347.20
INDIVIDUALS 3/						
Child:						
7 months to 1 year.....	5.80	7.20	8.60	25.00	31.40	37.10
1-2 years.....	6.90	8.70	10.40	30.00	37.70	45.20
3-5 years.....	8.30	10.40	12.60	35.80	45.20	54.50
6-8 years.....	10.70	13.70	16.50	46.60	59.40	71.40
9-11 years.....	13.40	17.10	20.60	58.00	74.20	89.30
Male:						
12-14 years.....	14.30	18.30	21.90	62.10	79.10	95.00
15-19 years.....	15.80	20.20	24.30	68.40	87.50	105.40
20-54 years.....	15.40	19.90	24.10	66.90	86.20	104.40
55 years and over.....	13.50	17.20	20.80	58.60	74.50	90.00
Female:						
12-19 years.....	12.70	16.10	19.30	55.00	69.70	83.50
20-54 years.....	12.40	15.80	18.90	53.80	68.50	82.10
55 years and over.....	11.10	14.00	16.70	48.10	60.80	72.50
Pregnant.....	15.30	19.30	23.00	66.30	83.40	99.80
Nursing.....	16.30	20.60	24.70	70.50	89.50	107.00

1/ Assumes that food for all meals and snacks is purchased at the store and prepared at home. Estimates for each plan were computed from quantities of foods published in the Winter 1975 issue of *Family Economics Review*. The costs of the food plans were first estimated using prices paid in 1965-66 by households in the Northeast from the USDA's Household Food Consumption Survey with food costs at three selected levels. These prices are updated by use of "Estimated Retail Food Prices by Cities" (Boston; New York, Northeastern New Jersey; Philadelphia) released monthly by the Bureau of Labor Statistics.

2/ 10 percent added for family size adjustment. See footnote 3.

3/ The costs given are for individuals in 4-person families. For individuals in other size families, the following adjustments are suggested: 1-person--add 20 percent; 2-person--add 10 percent; 3-person--add 5 percent; 5-or-6-person--subtract 5 percent; 7-or-more-person--subtract 10 percent.

*Cost of food at home estimated for food plans at three cost levels,
March 1976, North Central Region 1/*

Sex-age groups	Cost for 1 week			Cost for 1 month		
	Low-cost plan	Moderate-cost plan	Liberal plan	Low-cost plan	Moderate-cost plan	Liberal plan
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
FAMILIES						
Family of 2: 2/						
20-54 years.....	28.80	35.50	42.90	124.70	154.00	186.00
55 years and over.....	25.50	31.10	37.40	110.40	134.90	162.30
Family of 4:						
Couple, 20-54 years and children--						
1-2 and 3-5 years.....	40.50	49.80	60.00	175.80	215.80	260.10
6-8 and 9-11 years....	49.10	60.60	73.10	212.80	262.70	316.80
INDIVIDUALS 3/						
Child:						
7 months to 1 year.....	5.50	6.60	7.80	23.90	28.70	33.90
1-2 years.....	6.50	7.90	9.50	28.40	34.40	41.00
3-5 years.....	7.80	9.60	11.50	34.00	41.40	50.00
6-8 years.....	10.20	12.60	15.10	44.20	54.50	65.60
9-11 years.....	12.70	15.70	19.00	55.20	68.20	82.10
Male:						
12-14 years.....	13.60	16.70	20.10	58.90	72.50	87.30
15-19 years.....	15.00	18.50	22.30	64.90	80.10	96.80
20-54 years.....	14.50	18.00	21.80	62.90	78.10	94.60
55 years and over.....	12.70	15.60	18.80	55.10	67.50	81.60
Female:						
12-19 years.....	12.10	14.80	17.70	52.40	63.90	76.60
20-54 years.....	11.70	14.30	17.20	50.50	61.90	74.50
55 years and over.....	10.50	12.70	15.20	45.30	55.10	65.90
Pregnant.....	14.40	17.50	21.00	62.50	75.70	90.80
Nursing.....	15.30	18.70	22.50	66.30	81.10	97.30

1/ Assumes that food for all meals and snacks is purchased at the store and prepared at home. Estimates for each plan were computed from quantities of foods published in the Winter 1975 issue of *Family Economics Review*. The costs of the food plans were first estimated using prices paid in 1965-66 by households in the North Central Region from the USDA's Household Food Consumption Survey with food costs at three selected levels. These prices are updated by use of "Estimated Retail Food Prices by Cities" (Chicago, Cleveland, Detroit, St. Louis) released monthly by the Bureau of Labor Statistics.

2/ 10 percent added for family size adjustment. See footnote 3.

3/ The costs given are for individuals in 4-person families. For individuals in other size families, the following adjustments are suggested: 1-person--add 20 percent; 2-person--add 10 percent; 3-person--add 5 percent; 5-or-6-person--subtract 5 percent; 7-or-more-person--subtract 10 percent.

*Cost of food at home estimated for food plans at three cost levels,
March 1976, Southern Region 1/*

Sex-age groups	Cost for 1 week			Cost for 1 month		
	Low-cost plan	Moderate-cost plan	Liberal plan	Low-cost plan	Moderate-cost plan	Liberal plan
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
FAMILIES						
Family of 2: 2/						
20-54 years.....	28.70	35.40	41.10	124.20	153.50	178.60
55 years and over.....	25.30	30.90	35.70	109.60	133.80	155.00
Family of 4:						
Couple, 20-54 years and children--						
1-2 and 3-5 years.....	40.20	49.50	57.60	174.30	214.50	250.10
6-8 and 9-11 years....	48.80	60.40	70.00	211.40	261.40	303.90
INDIVIDUALS 3/						
Child:						
7 months to 1 year.....	5.40	6.60	7.70	23.60	28.60	33.40
1-2 years.....	6.40	7.80	9.10	27.90	33.90	39.60
3-5 years.....	7.70	9.50	11.10	33.50	41.10	48.10
6-8 years.....	10.10	12.50	14.50	43.70	54.10	62.90
9-11 years.....	12.60	15.70	18.10	54.80	67.80	78.60
Male:						
12-14 years.....	13.50	16.70	19.30	58.50	72.20	83.80
15-19 years.....	14.90	18.40	21.40	64.70	79.80	92.80
20-54 years.....	14.40	17.90	20.80	62.40	77.50	90.30
55 years and over.....	12.60	15.40	17.90	54.50	66.70	77.60
Female:						
12-19 years.....	12.10	14.80	17.10	52.40	63.90	74.10
20-54 years.....	11.70	14.30	16.60	50.50	62.00	72.10
55 years and over.....	10.40	12.70	14.60	45.10	54.90	63.30
Pregnant.....	14.40	17.50	20.30	62.50	76.00	88.10
Nursing.....	15.30	18.80	21.80	66.30	81.30	94.30

1/ Assumes that food for all meals and snacks is purchased at the store and prepared at home. Estimates for each plan were computed from quantities of foods published in the Winter 1975 issue of *Family Economics Review*. The costs of the food plans were first estimated using prices paid in 1965-66 by households in the South from the USDA's Household Food Consumption Survey with food costs at three selected levels. These prices are updated by use of "Estimated Retail Food Prices by Cities" (Atlanta; Baltimore; Washington, D.C., Maryland, Virginia) released monthly by the Bureau of Labor Statistics.

2/ 10 percent added for family size adjustment. See footnote 3.

3/ The costs given are for individuals in 4-person families. For individuals in other size families, the following adjustments are suggested: 1-person--add 20 percent; 2-person--add 10 percent; 3-person--add 5 percent; 5-or-6-person--subtract 5 percent; 7-or-more-person--subtract 10 percent.

*Cost of food at home estimated for food plans at three cost levels,
March 1976, Western Region 1/*

Sex-age groups	Cost for 1 week			Cost for 1 month		
	Low-cost plan	Moderate-cost plan	Liberal plan	Low-cost plan	Moderate-cost plan	Liberal plan
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
FAMILIES						
Family of 2: 2/						
20-54 years.....	28.20	35.60	43.10	122.30	154.60	186.80
55 years and over.....	25.10	31.10	37.60	108.20	135.20	162.90
Family of 4:						
Couple, 20-54 years and children--						
1-2 and 3-5 years.....	39.70	49.90	60.50	172.40	216.10	261.70
6-8 and 9-11 years....	48.20	60.80	73.70	209.10	263.60	319.30
INDIVIDUALS 3/						
Child:						
7 months to 1 year.....	5.40	6.50	8.00	23.40	28.30	34.50
1-2 years.....	6.40	7.90	9.60	27.80	34.20	41.40
3-5 years.....	7.70	9.60	11.70	33.40	41.40	50.50
6-8 years.....	10.00	12.60	15.30	43.50	54.60	66.40
9-11 years.....	12.60	15.80	19.20	54.40	68.50	83.10
Male:						
12-14 years.....	13.40	16.80	20.40	57.90	72.80	88.30
15-19 years.....	14.70	18.50	22.50	63.70	80.30	97.60
20-54 years.....	14.20	18.10	21.90	61.70	78.40	95.00
55 years and over.....	12.50	15.60	18.90	54.00	67.70	81.90
Female:						
12-19 years.....	11.90	14.80	17.90	51.40	64.00	77.40
20-54 years.....	11.40	14.30	17.30	49.50	62.10	74.80
55 years and over.....	10.30	12.70	15.30	44.40	55.20	66.20
Pregnant.....	14.10	17.50	21.10	61.10	75.90	91.30
Nursing.....	15.00	18.80	22.60	64.90	81.40	97.80

1/ Assumes that food for all meals and snacks is purchased at the store and prepared at home. Estimates for each plan were computed from quantities of foods published in the Winter 1975 issue of *Family Economics Review*. The costs of the food plans were first estimated using prices paid in 1965-66 by households in the West from the USDA's Household Food Consumption Survey with food costs at three selected levels. These prices are updated by use of "Estimated Retail Food Prices by Cities" (Los Angeles; San Francisco, Oakland) released monthly by the Bureau of Labor Statistics.

2/ 10 percent added for family size adjustment. See footnote 3.

3/ The costs given are for individuals in 4-person families. For individuals in other size families, the following adjustments are suggested: 1-person--add 20 percent; 2-person--add 10 percent; 3-person--add 5 percent; 5-or-6-person--subtract 5 percent; 7-or-more-person--subtract 10 percent.

CONSUMER PRICES

Consumer price index for urban wage earners and clerical workers
(1967 = 100)

Group	March 1976	Feb. 1976	Jan. 1976	March 1975
All items.....	167.5	167.1	166.7	157.8
Food.....	178.7	180.0	180.8	171.3
Food at home.....	177.7	179.6	180.8	171.4
Food away from home.....	182.8	181.9	180.9	171.3
Housing.....	174.5	173.8	173.2	163.6
Shelter.....	176.3	176.0	175.9	166.6
Rent.....	142.7	142.1	141.2	135.5
Homeownership.....	188.7	188.6	188.8	178.2
Fuel and utilities.....	178.9	177.9	176.3	163.0
Fuel oil and coal.....	247.6	249.4	248.9	228.3
Gas and electricity....	183.7	181.9	179.5	164.0
Household furnishings and operation.....	166.6	165.2	163.7	155.6
Apparel and upkeep.....	145.0	144.0	143.3	140.9
Men's and boys'.....	145.4	143.9	142.6	141.3
Women's and girls'.....	138.5	138.2	138.1	136.1
Footwear.....	147.5	146.1	144.7	144.0
Transportation.....	159.8	158.5	158.1	144.8
Private.....	158.5	157.2	156.8	144.0
Public.....	172.3	170.4	170.2	152.3
Health and recreation.....	160.6	159.7	158.6	151.1
Medical care.....	180.6	178.8	176.6	164.6
Personal care.....	157.4	157.0	155.7	148.9
Reading and recreation...	149.0	148.5	148.2	142.0
Other goods and services.	151.8	151.3	150.5	146.5

Source: U.S. Department of Labor, Bureau of Labor Statistics.

Index of prices paid by farmers for family living items
(1967 = 100)

Item	Mar. 1976	Feb. 1976	Jan. 1976	Mar. 1975	Feb. 1975	Jan. 1975
All items.....	184	183	183	173	175	173
Food and tobacco.....	181	---	---	176	---	---
Clothing.....	---	193	---	---	182	---
Household operation.....	---	---	188	---	---	168
Household furnishings.....	---	---	161	---	---	149
Building materials, house..	192	---	---	183	---	---

Source: U.S. Department of Agriculture, Statistical Reporting Service.

FAMILY ECONOMICS REVIEW
SPRING 1976

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HIGHLIGHTS/SUMMER 1976

TSP AS A GROUND-BEEF EXTENDER

ORGANIC FOODS

COSTS OF MILK AND MILK PRODUCTS

FOOD SAFETY IN THE HOME

ARS-NE-36

Consumer and Food Economics Institute
Agricultural Research Service
U.S. DEPARTMENT OF AGRICULTURE

FAMILY ECONOMICS REVIEW is a quarterly report on research of the Consumer and Food Economics Institute and on information from other sources relating to economic aspects of family living. It is prepared primarily for home economics agents and home economics specialists of the Cooperative Extension Service.

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TEXTURED SOY PROTEIN AS A GROUND BEEF EXTENDER

by Dianne Odland and Carolyn Adams

In times of high food prices, budget-minded consumers are anxious to find ways to stretch their food dollar. The use of textured soy protein (TSP) to extend the yield of main dish items made with ground beef is one way to save money.

To determine comparative cost and quality of main dish items made with TSP-extended ground beef or all ground beef, a study was conducted in the foods laboratory of the Consumer and Food Economics Institute. Three main dish items were tested—ground beef patties, meatloaf, and chili con carne. Each item was made with all ground beef (no TSP added), with ground beef premixed with rehydrated unseasoned TSP at the supermarket, and with ground beef mixed with rehydrated unseasoned TSP¹ in the laboratory. Also, the patties were made with a seasoned TSP product² that is sold specifically for use in ground beef patties, and the meatloaf was made with seasoned TSP product made specifically for meatloaf. Both seasoned products were rehydrated and mixed with ground beef in the laboratory.

Main dish items made with all ground beef, the supermarket TSP-ground beef blend, or the laboratory blend using unseasoned TSP were prepared according to basic home recipes. An equal weight of TSP-beef mixture was substituted for all ground beef. The patties and meatloaf made with seasoned TSP were prepared according to directions given on the seasoned TSP product label.

Unseasoned and seasoned TSP products were purchased in the dehydrated form and were rehydrated in the laboratory before mixing with ground beef. Following package directions, unseasoned TSP (1.65 ounces) was mixed with 2/3 cup water, allowed to stand 5

minutes, stirred, and mixed with 1 pound ground beef to yield about 1-1/2 pounds rehydrated TSP-beef mixture. One packet of TSP with seasonings for either ground beef patties or meatloaf (4 ounces TSP and seasonings) was added to 1-1/2 cups water, stirred, allowed to stand 15 minutes, and combined with 1 pound ground beef to give a mixture weighing about 2 pounds. This mixture was used to make patties and meatloaf according to directions given on the seasoned TSP product label. TSP fortified with vitamins and minerals made up one-half the ingredients in the seasoned TSP product packet, and items such as wheat crumbs, dried onions, nonfat dry milk, salt, pepper, and other spices made up the other half.

Regular ground beef was used in the all-beef main dish items and in combination with both forms of TSP rehydrated in the laboratory. Ground beef and TSP-ground beef blend were obtained from the same supermarket to provide a similar basis for comparison.

Finished products were weighed and evaluated for appearance, texture, flavor, and overall quality on a 5-point scale ranging from "very good" to "very poor" by a trained taste panel of six members.

Prices of required ingredients were obtained in three supermarkets in the Washington, D.C., metropolitan area in April 1976. The cost of each main dish item was calculated by totaling the average price for all ingredients. Cost per serving was determined by dividing total cost by the number of servings for each main dish item.

Cost Comparisons

Cooked patties, meatloaf, and chili containing TSP had a higher yield and a lower cost per serving than the corresponding items made with all ground beef (see table). All three main dish items cost slightly less when made with supermarket TSP-ground beef blend than with unseasoned TSP rehydrated and mixed with ground beef in the laboratory.

On a per serving basis, patties made with seasoned TSP cost less than patties made with the

¹At the time this article went to press, we discovered that the unseasoned TSP product tested in this study is no longer being manufactured.

²At the time this study was initiated, only one brand of seasoned TSP was available in area supermarkets. Since then another brand has been introduced. This brand has not been tested in our laboratory.

Cost of main dish items made with all beef or a blend of textured
soy protein and ground beef ¹

Food tested	Weight of cooked main dish item ²	Number of servings ³	Total cost	Cost per serving
	<i>Ounces</i>		<i>- - - Dollars - - -</i>	
<u>GROUND BEEF PATTIES</u>				
All ground beef (no TSP) ..	16.00	6.0	1.23	0.21
Supermarket TSP blend	18.55	6.9	1.04	.15
Laboratory TSP blend:				
Unseasoned	17.50	6.5	1.06	.16
Seasoned	25.80	9.6	1.24	.13
<u>MEATLOAF</u>				
All ground beef (no TSP) ..	24.06	6.0	1.44	.24
Supermarket TSP blend	28.32	7.1	1.25	.18
Laboratory TSP blend:				
Unseasoned	27.25	6.8	1.27	.19
Seasoned	25.96	6.5	1.21	.19
<u>CHILI CON CARNE</u>				
All ground beef (no TSP) ..	76.33	9.0	3.13	.35
Supermarket TSP blend	85.91	10.1	2.94	.29
Laboratory TSP blend:				
Unseasoned	82.38	9.7	2.96	.31

¹Prices from 3 Washington, D.C., area supermarkets, April 1976. Textured soy protein products were not available in all 3 stores.

²Means of 3 tests for ground beef patties and 2 tests each for meatloaf and chili con carne.

³Weight of cooked main dish item divided by weight per serving of the all-beef main dish item. A single serving was defined as 1 ground beef patty, 2.7 oz; 1 slice meatloaf, 4.0 oz; and 1 cup chili con carne, 8.5 oz.

Note: At the time this article went to press, we discovered that the unseasoned TSP product tested in this study is no longer being manufactured.

Also, at the time this study was initiated only one brand of seasoned TSP was available in area supermarkets. Since then another brand has been introduced. This brand has not been tested in our laboratory.

supermarket TSP-ground beef blend or unseasoned TSP. The cost of meatloaf made with seasoned TSP was the same as meatloaf made with unseasoned TSP.

One serving of ground beef patties costs 8 cents less, and one serving of meatloaf or chili, 6 cents less when made with the least expensive form of TSP than when made with all ground beef. Thus, a significant saving may be realized by using TSP extenders for these main dish items.

Quality Comparisons

Each main dish item received a score of "good" in all quality factors except patties made with the supermarket TSP-ground beef blend, which received a rating of "fair" in flavor, and patties made with seasoned TSP, which received a rating of "fair" in flavor and overall quality.

Judges comments indicated that *compared with the all-beef main dish item:*

- Patties and meatloaf made with the supermarket TSP-ground beef blend were grainy or mealy; patties had an off-flavor.
- Patties made with unseasoned TSP had an off-flavor; meatloaf had a weak meat flavor.
- Patties and meatloaf made with seasoned TSP were soft, crumbly, too moist, and off-flavored.
- Chili con carne made with either the supermarket TSP-ground beef blend or unseasoned TSP was similar in all quality factors.

These results indicate that the flavor of TSP may be masked by strong-flavored ingredients such as onions, tomatoes, and chili powder or by the diluting effect of other ingredients. For example, in chili, the combined weight of ground beef plus rehydrated TSP accounted for only 25 percent of the total weight of all ingredients; in meatloaf, about 68 percent; and in patties, nearly 100 percent, as no other ingredients were added except spices.

Deciding Which Product to Use

Differences in both cost and eating quality between main dish items made with all ground beef and those made with TSP extenders are important factors in deciding which product to use. Although each main dish item made with TSP was found to be less expensive than the corresponding item prepared from all ground beef according to a home recipe, some had a less desirable flavor or texture.

Grocery purchased TSP-ground beef blend or unseasoned TSP that is mixed with ground beef at home are advantageous because they can be substituted for all ground beef in your own recipe for meat sauce, lasagna, tacos, sloppy joe sauce, or any other main dish item in which ground beef is an ingredient. On the other hand, the seasoned TSP product tested in this study is convenient to use because all seasonings required for preparation of a main dish item are included in the packet. Seasoned TSP and 1 pound ground beef are the only items which must be purchased.

COSTS OF MILK AND MILK PRODUCTS AS SOURCES OF CALCIUM—AN UPDATE

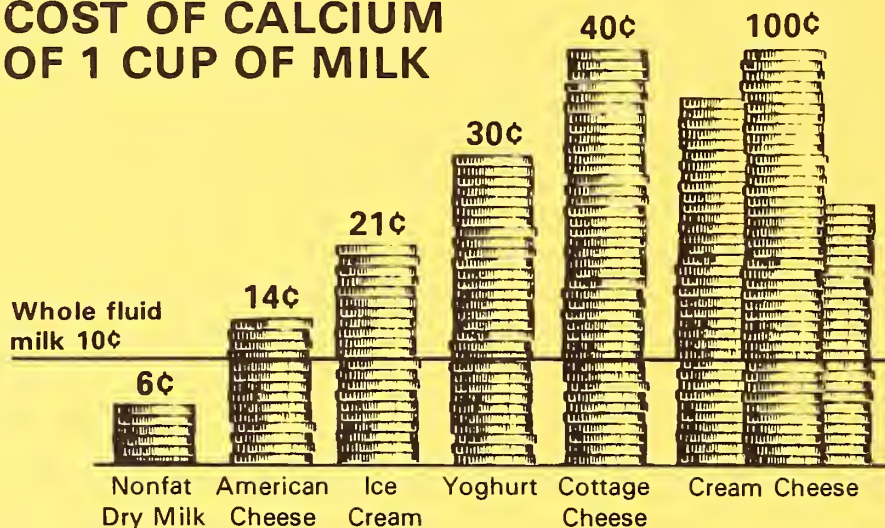
by Pamela Isom

Milk and foods made from milk are major sources of the mineral calcium in the diet. However, the cost of milk and milk products, such as ice cream and cheeses, as sources of calcium varies greatly. Careful selection can result in substantial savings.

Milk products generally are more expensive as sources of calcium than milk. In Washington,

D.C., in April 1976, equal amounts of calcium from process American cheese cost one-half more and ice cream twice as much as from whole milk (see chart). As sources of calcium, table cream, natural blue cheese, and cream cheese cost from 6 to 10 times as much as milk (see table). Some forms of milk (that provide about the same amount of calcium) are more

COST OF CALCIUM OF 1 CUP OF MILK



*PRICES FROM WASHINGTON D.C. SUPERMARKETS, APRIL 1976.

USDA

NEG. ARS 6030-76 (6)

economical than others: A cup of milk made from nonfat dry milk cost 6 cents; fresh skim milk, 9 cents; and reconstituted evaporated milk and whole milk, 10 cents.

Some changes in cost relationships of milk and certain milk products have occurred in the last 4 years.¹ For example, in 1972 in Washington, D.C., a cup of reconstituted evaporated milk cost about two-thirds as much as a cup of whole fluid milk; now it costs as much as whole milk. In 1972 ice milk cost only two-thirds as much as ice cream; now it costs almost as much. Of the milk and milk products priced, only plain yoghurt was no higher in price in 1976 than in 1972. Even so, yoghurt continues to be an expensive source of calcium compared with milk, ice cream, and most cheeses.

Costs shown in the table should not be used to illustrate cost relationships in the country as a whole. Prices of fresh milk in Washington, D.C., used in preparing the table differ from those in other areas. For example, in spring of 1976 the price of a half-gallon of fresh whole milk was 85 cents in Washington, D.C.; 69 cents in Los Angeles, Calif.; and 98 cents in Atlanta, Ga.² To use local prices to figure costs of milk and calcium equivalent portions of milk products, insert in column 5 the local price for the market units in column 2. Then, divide the prices in column 5 by the number of portions in column 4. For instance, suppose the cost of a half-gallon of ice milk was \$1.18. Write 118 in column 5 and divide by the 5.3 portions listed in column 4. The result is 22 cents—the cost for calcium equivalent portion.

¹ See *Family Economics Review*, December 1972, pp. 12-15.

² Prices collected by the Bureau of Labor Statistics, U.S. Department of Labor.

Agriculture Handbook No. 456 "Nutritive Value of American Foods in Common Units" by Catherine F. Adams was published in December 1975. This publication provides values for calories and nutrients supplied by various household measures and market units of foods. These values have been prepared to serve the needs of the growing number of research groups who conduct dietary surveys and nutritional status studies on individuals and household groups, as well as the needs of other professional and technical personnel who plan or evaluate diets and food supplies, including personnel in food industries and health-related professions.

The handbook includes data on approximately 1,500 foods in the form of menu items, snacks, and market products; some as ready-to-eat foods, some that require preparation in varying degrees, and some that are used as ingredients in preparing other products. Although this information is primarily for use with retail supplies and foods used or prepared in the home, some of it applies to foods used in

institutional and other large-scale operations.

The nutritive values on which data are provided include water, food energy, protein, fat, carbohydrate, five mineral elements (calcium, phosphorus, iron, sodium, and potassium), five vitamins (vitamin A, thiamin, riboflavin, niacin, and ascorbic acid), total saturated fatty acids, and two unsaturated fatty acids (oleic acid and linoleic acid).

Development of suitable data on weight-volume relationships for the measures of the food items has been an essential part of the preparation of the information presented. Procedures and problems in arriving at the weight-volume relationships are discussed.

To obtain copies of this handbook, send check or money order (no cash) for \$5.15 per copy to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Please include your ZIP code. For information on machine-readable tapes of the data write: Consumer and Food Economics Institute, Survey Statistics Group, ARS, USDA, Hyattsville, Md. 20782.

ORGANIC FOODS—AN UPDATE

by Cynthia Cromwell

In 1972, USDA's study on the cost of organic foods indicated that families substituting organic foods for regular foods are likely to pay more for a similar diet, but might reduce the amount paid for organic foods slightly by comparison shopping.¹ A study in February 1976 found that organic foods continue to cost more—1-1/3 to 1-2/3 times as much as regular foods. Consumers continue to buy the more expensive organic foods even though they are

not necessarily more nutritious, and the special conditions required for the growth and processing of such foods are not regulated or assured.

To illustrate cost differences, the USDA compared prices of 47 foods advertised and labeled as organic (organic foods) in two natural food stores and similar foods produced by regular methods (regular foods) in a supermarket in the Washington, D.C., area in February 1976 (see table). A group of these foods made up of a unit (pound or quart) of each of 33 organic foods available in both natural food stores cost \$28 at a large natural food store (store No. 1) and \$24.02 at a cooperatively

¹ Cromwell, C., Organic foods, *Family Economics Review* pp. 3-5, September 1975.

owned natural food store (store No. 2).² A similar basket of regular foods cost considerably less—\$17.49—at the supermarket. In each store, the brand or package with the lowest cost per unit was priced.

The difference in cost between organic and regular foods was greater for processed than for unprocessed foods. The cost of 10 processed organic foods in the basket, such as canned and dried fruits and vegetables, cereals and bread, and honey, averaged 1-2/3 times as much as their regular counterparts. The 23 unprocessed organic foods in the basket—all fresh fruits and vegetables—averaged slightly less than 1-1/2 times as much as the regular produce. The cost relationships for produce are expected to vary from time to time and place to place because the season and the nearness of the farmer to a market will affect the cost.

While many organic foods cost over twice as much as regular foods, a few organic foods cost less. For example, organic-labeled chicken cost 2-1/3 to 3 times as much as regular chicken; organic onions cost almost 3-1/2 times as much as regular onions; but organic-labeled fresh brussels sprouts cost one-third less than regular brussels sprouts; and organic-labeled wheat cereal (to be cooked) also cost about one-third less than the regular wheat cereal.

Prices of most organic foods in store No. 2 (the cooperatively owned store) were lower than in store No. 1 (the large natural food store). Organic lentils cost about the same in store No. 2, but cost 3-1/3 times as much in store No. 1, as regular lentils from the supermarket. Fresh organic tomatoes cost about 1-1/3 as much in store No. 2, but twice as much in store No. 1, as regular tomatoes.

These price relationships are similar to the results of the 1972 study. In the 1972 and

1976 studies, the difference between the cost of organic and regular foods was greater for processed than unprocessed foods; cost relationships of organic and regular foods varied considerably in the two natural food stores; and the cooperatively owned natural food store generally had lower prices than the larger natural food store. In the previous study, the group of organic foods available in the natural food stores cost 1-1/2 to 2 times as much as similar regular foods from a supermarket. In this study, a similar, but not identical, group of organic foods cost 1-1/3 to 1-2/3 times as much as its regular counterpart.

What is an organic food? There is no legal definition for organic foods. Producers, manufacturers, and retailers, therefore, may use the term loosely in advertising and labeling these foods. Consumers generally expect organic foods to be produced without pesticides and artificial fertilizers and to be free of synthetic additives, preservatives, hormones, and antibiotics.

Contrary to some claims, food labeled organic is not necessarily more nutritious. According to the 1974 YEARBOOK OF AGRICULTURE,³ there is no scientific evidence that plants grown with only organic fertilizers, or meat from animals raised on only organically fertilized feed, have greater nutritive value than regular foods produced by the usual agricultural methods.

The Federal Trade Commission (FTC) began public hearings in July 1976 on food advertising, including organic food claims. At issue is whether there should be a regulation to prohibit terms such as "organic" and "organically grown" in advertising. Some relevant questions to be discussed are: Is there confusion among consumers about the meaning of these terms? Does the use of the terms in advertising a food imply that it is superior nutritionally or in other respects to a similar food not so advertised; and indeed is the "organic" food nutritionally or otherwise superior? Under such regulation, if enacted, label statements such as "no preservatives or synthetic additives" would continue to be allowed if the food does not have such ingredients.

² Store No. 1, a large natural food store in the Washington, D.C., area, sells organic, health, and special diet foods; vitamins; cosmetics; and literature. The variety of foods available in this store was greater than in most other natural food stores in the area but less than in the supermarket. This store sells frozen organic ground meat and poultry.

Store No. 2, a natural—almost completely organic—food store, is owned cooperatively by the workers. Many foods are purchased in bulk. Some are repackaged at the store in smaller containers; some are sold in the customer's own container. There is a large variety of whole grain cereal products, dried fruits, and legumes available.

³ Leverton, R. M. Organic, inorganic: What they mean. *1974 Yearbook of Agriculture*, pp. 70-73. U.S. Government Printing Office, Washington, D.C.

Cost of selected foods advertised as "organic" compared with cost of similar foods not labeled "organic" (regular), Washington, D.C., February 1976¹

Foods	Unit	Regular food	Organic as percentage of regular food	
		Supermarket	Store No. 1 ²	Store No. 2 ²
<i>Dollars</i>				
<i>Percent</i>				
PROCESSED FOODS				
Canned fruits and vegetables, juices and preserves:				
Apple juice	Qt	0.45	198	182
Apple sauce	Lb	.29	276	--
Peach preserves	Lb	.87	151	--
Pickles	Qt	1.00	150	150
Tomatoes	Lb	.23	326	296
Dried fruits and vegetables:				
Lentiles, hulled	Lb	.37	338	100
Raisins	Lb	.78	--	89
Flour, cereals, pastas, and bread:				
Cornmeal, yellow	Lb	.26	154	115
Granola	Lb	.69	--	132
Grits	Lb	.37	214	116
Oats, rolled (not quick-cooking)	Lb	.52	--	56
Wheat cereal	Lb	.49	82	61
Whole wheat bread	Lb	.55	--	144
Whole wheat flour	Lb	.22	205	177
Other:				
Honey	Lb	.94	120	115
Peanut butter	Lb	.79	--	170
Vinegar, cider	Qt	.53	202	306
UNPROCESSED FOODS				
Meat and poultry:				
Ground beef, regular	Lb	.75	313	--
Chicken:				
Fryer, whole	Lb	.65	254	--

Fryer, cut-up	Lb	.69	304	--
Breast with rib	Lb	.89	235	--
Leg	Lb	.79	265	--
Livers	Lb	1.19	176	--
Eggs	Doz	.79	165	--
Fresh fruits and vegetables:				
Apples	Lb	.33	173	142
Grapefruit	Lb	.17	288	124
Oranges	Lb	.18	228	117
Tangerines	Lb	.21	186	143
Broccoli	Lb	.55	125	129
Brussels sprouts	Lb	1.26	66	67
Cabbage, green	Lb	.10	550	430
Cabbage, red	Lb	.33	179	152
Carrots	Lb	.23	183	152
Celery, pascal	Lb	.44	148	109
Cucumbers	Lb	.53	160	160
Garlic	Lb	2.45	90	65
Green beans	Lb	.59	151	180
Greer pepper	Lb	.53	236	200
Greens (collards, kale)	Lb	.39	144	233
Lettuce, head	Lb	.39	164	144
Lettuce, romaine	Lb	.49	131	129
Mushrooms	Lb	.69	326	261
Onions	Lb	.23	343	343
Potatoes, white	Lb	.33	179	142
Spinach	Lb	1.10	95	82
Squash, summer	Lb	.59	169	114
Tomatoes	Lb	.52	208	138

¹If a variety of brands or package sizes were available, the price of the best buy was chosen.
²Store No. 1 is a large natural food store that sells food, vitamins, cosmetics, and literature.
Store No. 2 is a natural--almost completely organic--food store owned cooperatively by the workers.
Many foods are purchased in bulk. Some are repackaged at the store in smaller containers; some are sold in the customer's own container.

POPULATION CHARACTERISTICS

Population Growth

The total population of the United States was almost 215 million on January 1, 1976, an increase of four-fifths of 1 percent over a year earlier. The rate of population growth in 1975 was slightly higher than in 1974 but considerably lower than in 1970. About 2.1 children per woman are required for population replacement in the absence of population growth through net immigration. However, both the birth rate (14.9 births per 1,000 population in 1975) and the total fertility rate (1,800 children per 1,000 women in 1975) imply less than two children per woman. By far the strongest preference among wives under 25 is for a two-child family. In 1975 married women under 25 years of age reported that they expect to have an average of 2.2 children in their lifetimes; those 35 to 39 years old expect to have 3.1 children.

Contrary to historic trends, metropolitan areas as a whole are no longer gaining population through migration from nonmetropolitan areas in the United States. Only two of the eight largest metropolitan areas (Washington, D.C., and San Francisco-Oakland-San Jose) grew by as much as 3 percent between 1970 and 1974. The rate of decline in the farm population has diminished from 5 percent per year in the 1960's to 2 percent in the 1970's. Since 1970, the Mountain States have been the fastest growing area of the United States; followed by the South Atlantic States. Changes in the population of Florida account for one-quarter of the South's population growth since 1970 and one-half of its net immigration.

The black population numbered approximately 24 million in March 1975 and comprised 11 percent of the total U.S. population. More blacks are moving to the South, and fewer blacks are leaving the South. The 11 million persons of Spanish origin accounted for 5 percent of the population in 1975.

Household and Family Characteristics

The characteristics of households and families in the United States have been undergoing substantial change in recent years. For

example, nearly three-fourths of all households in 1960 included a head and spouse, but by 1975 this figure had dropped to two-thirds. During this period, the proportion of households comprised of persons living alone or with nonrelatives and of families headed by women with no husband present increased.¹

Average *household size* has been steadily declining since the early 1960's when it had remained constant at about 3.33 persons for several years. In 1974, the average dropped below 3 persons for the first time—to 2.97 persons—and in 1975 declined further—to 2.94 persons. Between 1960 and 1975, *family size* decreased from 3.67 persons to 3.42 persons. Since 1960, the proportion of families with no own children under 18 years has increased and the proportion with three or more own children has declined.

The declining birthrate has contributed to the decrease in family size, and because most households contain families, also to the decrease in household size. One of the principal causes for the decline in household size has been the increase in the number of individuals living alone as one-person households. Between 1960 and 1975 the number of one-person households doubled from 7 million to 14 million; as a proportion of all households those with one person increased from 13 to 20 percent. Men and women under the age of 35 have accounted for nearly half of the growth in this type of household since 1970, reflecting the tendency for unmarried young persons to set up a household of their own. The interrelationship between average household size and average family size is such that as young adults

¹ A household consists of all the persons who occupy a housing unit including related family members and unrelated persons such as lodgers or employees who share the housing unit. A family refers to a group of two or more persons related by blood, marriage, or adoption and residing together. A household may contain more than one family, but some households—such as those consisting of a person living alone or with unrelated persons—do not contain a family.

leave families to establish nonfamily households the average size of both households and families becomes smaller.

High rates of divorce and separation and the tendency of young couples to delay childbearing have also contributed to the declining family size. In 1975, the number of divorces exceeded 1 million for the first time in U.S. history, whereas the number of marriages dropped to the lowest level since 1969.

The education of the family head has a relationship to the family size. The average size in 1975 for families where the head has completed at least 1 year of college was 3.55 persons compared with an average size of 4.42 persons for families where the head has completed 8 or fewer years of school. This inverse relationship between size of family and education of the head holds for both black and white families.

Money Income

Median family income rose 7 percent in 1974 to \$12,840. This increase, however, was less than the rise in prices, resulting in a net loss in real purchasing power. After adjusting for price increases the 1974 median income actually decreased by about 4 percent between 1973 and 1974. While the decline in real median income declined for all families in general, the income of families where the head worked full time year round (\$16,070 in 1974), kept pace with the increase in prices.

Both white and black families experienced a decline in real median income between 1973 and 1974. The median income of white families was \$13,360 and of black families, \$7,810. The decrease in real income was 4 percent for whites and 3 percent for blacks when expressed in constant dollars.

Of all persons 14 years old and over about 93 percent of the men and 71 percent of the

women received income in 1974. Among persons who received income in 1974 the median income for men was \$8,380 and for women \$3,080.

In March 1975, 13 percent of all families were headed by a female and 3 percent by a male with no spouse present. The 1974 median income of these families was \$6,400 and \$11,740, respectively. About 30 percent of all families headed by a female had incomes below \$4,000 in 1974 compared with 11 percent for male heads with no wife present and 6 percent for husband-wife families.

Median family income is highly correlated with the number of earners per family. The median income for families with three or more earners was \$20,460 in 1974; for families with two earners, \$14,750; and for families with one earner, \$10,960.

The number of poor persons in the United States declined by about 15 million during the 1960's, but the number in 1974 (24 million) was not significantly different from that in 1969. About 16 million white persons, 8 million black persons, and 3 million persons of Spanish origin (mostly white) were below the poverty level in 1974. These numbers represented 12 percent of all persons, 9 percent of white persons, 31 percent of black persons, and 23 percent of persons of Spanish origin.

Sources: U.S. Department of Commerce, Bureau of the Census, *Current Population Reports, Population Characteristics*, Household and Family Characteristics: March 1975, Series P-20, No. 291, February 1976; Population Profile of the United States: 1975, Series P-20, No. 292, March 1976. U.S. Department of Commerce, Bureau of the Census, *Current Population Reports, Consumer Income*, Money Income in 1974 of Families and Persons in the United States, Series P-60, No. 101, January 1976; Characteristics of the Population Below the Poverty Level: 1974, Series P-60, No. 102, January 1976.

FOOD SAFETY IN THE HOME¹

by Judith Jones and Jon Weimer
Economic Research Service

Federal and State inspection laws have been designed to assure the consumer that food products are wholesome and properly labeled, thus helping to guard against foodborne illness caused by bacteria or insanitary processing. Nevertheless, the incidence of foodborne illness continues to be of great concern. The U.S. Public Health Service reported 23,448 cases of microbial food poisoning in 1970.² Most food-related illnesses are probably not reported, however, and estimates of such illnesses range from 2 to 10 million cases per year. A sizable proportion of those that are reported have been traced to foods prepared or eaten in the home. The Economic Research Service of the USDA conducted a survey during summer of 1974 to evaluate consumer awareness of and attitudes toward food safety practices in the home with selected food items. This survey was conducted as an aid in planning consumer education programs on food safety and to identify those groups of people having the greatest need for food safety information. Data were collected from personal interviews with approximately 2,200 homemakers in the United States.

Two general types of information were sought from the homemaker: "behavioral"—what the homemaker actually does in the kitchen—and "awareness"—her opinions, ideas, and knowledge concerning specific food safety practices and principles. The interviewer asked the homemaker to think about the last time she cooked a specific food product, and then asked her a series of questions about her behavior in preparing that product. Questions were

asked about beef roast, pork roast, turkey, chicken, hamburger patties, and salad sandwiches—food products that are commonly incriminated as sources of food poisoning. The homemaker was then asked about her opinions and knowledge on a variety of food safety principles and issues.

Based on their answers to a select number of these "behavioral" and "awareness" questions, homemakers were grouped as to whether their behavior in preparing and storing food constitutes a high or low risk of spawning foodborne illness in the household. A household was considered to be "high risk" if the homemaker did one or more of the following:

- Cooked hamburgers rare.
- Left cooked meat and poultry at room temperature for more than 24 hours.
- Left poultry, egg, or fish salad sandwiches at room temperature for more than 2 hours.
- Kept meat or poultry leftovers in the refrigerator where the temperature was above 45° F.
- Stuffed a turkey a day or more in advance of roasting it.
- Cooked a turkey partially at one time and completed the cooking at another time.
- Stored leftover stuffing in a turkey.

The fact that households are designated as "high risk" for committing any of these behavioral practices does not mean, of course, that members of such households would inevitably suffer from foodborne illness. Rather, such households may be judged more vulnerable to an incidence of foodborne illness than they would be if none of these practices were followed. On the basis of these criteria, almost two-thirds (63 percent) of the households sampled would be classified as "high risk."

¹ Condensed from a paper presented at the annual Agricultural Outlook Conference, USDA, November 1975.

² "Foodborne Outbreaks—Annual Summary," 1970. U.S. Department of Health, Education, and Welfare, Public Health Service, Center for Disease Control, Atlanta, Ga. 30333.

The demographic profile revealed that older homemakers (65 and older), homemakers with grade school educations only, those from households with low incomes, and those residing in rural areas are less likely than corresponding subgroups to represent “high risk” households. Homemakers from these small and often low-income families are not as apt to serve a whole turkey or beef and pork roasts, therefore reducing the risk of foodborne illness.

Of the “high risk” homemakers, 66 percent were classified as such solely because they left cooked meat or salad sandwiches at room temperature for more than 2 hours. For this reason perhaps the main focus of future consumer education programs should be to warn homemakers of the danger inherent in holding susceptible foods at room temperature.

Homemakers were also grouped on their awareness of specific food safety facts. To be considered knowledgeable, a homemaker must be cognizant of the risk of cross-contamination and be concerned about leaving cooked meat at room temperature for over 2 hours. Seventy-eight percent of the homemakers sampled were classified “unaware” of important food safety principles because:

- They would not wash hands, utensils, and working surfaces with soap and water after cutting up fresh meat and before chopping vegetables to be eaten raw.
- They would be “not too concerned” or “not concerned at all” about cooked meat or poultry standing at room temperature for 2 to 3 hours.

Although the criteria for identifying a homemaker as “unaware” were not as comprehensive as, and thus not parallel with, the criteria for designating a homemaker as “high risk,” it is possible to broadly classify each homemaker into one of four behavior/awareness categories:

Behavior	Awareness	
	Aware	Unaware
	<i>Percent</i>	
Low risk	9	28
High risk	13	50

Homemakers whose sound knowledge of food safety principles and concepts are reflected in their behavior in the kitchen constituted only 9 percent of the homemakers sampled. An additional 28 percent seemingly did the right thing without knowing why. It may be difficult to effect any change in the behavior of the 13 percent who are knowledgeable about food safety principles but who proceed to actually practice unsafe procedures. An education program should be most effective for the largest group—50 percent—who are not aware of certain food safety principles and subject their families to increased risk.

Since there is a need to inform the homemaker on how to improve safety in storing, handling, and preparing foods, respondents were asked what they thought was the *one* best way to get this kind of information to them. Television spots received the most votes—approximately 26 percent of the homemakers cited TV as the preferred manner to get food safety information communicated to them. Food labels were cited by an additional 24 percent of the homemakers. Radio spots were cited by only 3 percent.

For additional information on food safety see “Keeping Food Safe to Eat,” Home and Garden Bulletin No. 162. A single free copy is available from Office of Communication, U.S. Department of Agriculture, Washington, D.C. 20250.

SOCIAL AND ECONOMIC CHARACTERISTICS OF THE OLDER POPULATION 1974

Since the turn of the century, the older population has grown rapidly as a proportion of the total population. In 1974, persons 65 years and over numbered 22 million persons and made up 10 percent of the total population. In 1900, they constituted only 4 percent.

The social and economic characteristics of the older population often differ from the total population. For example:

- Older persons are more likely to fall below the low-income level (18.6 percent compared with 11.9 percent in 1972).
- Older persons suffer fewer injuries than the total population, but are more likely to have a limitation of activity because of a health or physical condition.
- A higher percentage of the older population register to vote (76 percent compared with 62 percent) and, having registered, are also more likely to vote (64 percent compared with 45 percent).
- A greater percentage of older persons live in owner-occupied homes and a smaller percentage live in renter-occupied homes.
- Older persons change residence less frequently.

The employment patterns of persons over 65 years reflect the tendency towards early retirement. Since 1940, the employment rate of older persons has declined from 24 percent to 14 percent. Of older persons who were employed in 1974, the highest percentage were working in white-collar occupations. Older workers with more education were more likely to stay in the work force longer than those with less education.

Older persons tend to live in metropolitan areas in small groups and with relatives. Most older men are heads of households and 70 percent are married with a wife present. However, the most common situation for older women is widowhood. Of the 1 million elderly who live in institutions, 80 percent live in homes for the aged. Twice as many older women than men live in institutions.

Source: U.S. Department of Commerce, Bureau of the Census. *Social and Economic Characteristics of the Older Population 1974*. (Current Population Reports, Special Studies Series P-23, No. 57) Washington, D.C., 1975.

SOME NEW USDA PUBLICATIONS

(Please give your ZIP code in your return address when you order these.)

Single copies of the following are available free from the Office of Communication, U.S. Department of Agriculture, Washington, D.C. 20250:

- HOME HEATING—SYSTEMS, FUELS, CONTROLS. FB 2235. Revised May 1975.
- ROSES FOR THE HOME. G 25. Revised October 1975.
- BETTER LAWNS. G 51. Revised October 1975.
- SUBTERRANEAN TERMITES—THEIR PREVENTION AND CONTROL IN BUILDINGS. G 64. Revised July 1975.
- CONTROLLING HOUSEHOLD PESTS. G 96. Revised March 1976.

TIME USE: A MEASURE OF HOUSEHOLD PRODUCTION OF GOODS AND SERVICES

A monograph titled "Time Use: A Measure of Household Production of Family Goods and Services," by Kathryn E. Walker and Margaret E. Woods, has been published by the Center for the Family of the American Home Economics Association.

The monograph, which is designed as a reference tool, is based on data collected from 1,296 families in Syracuse, N.Y., in 1967-68 as part of a study at Cornell University. These data provide information on the amount of time spent on specific household tasks by men, women, and children in the United States.

The major part of the monograph is devoted to the presentation of detailed information on the total time used by all family members for all household work and for each separate household work activity. There is an extensive amount of descriptive data on each kind of household work in relation to family characteristics such as age of children, number of children, family type, employment status of the wife, education of the husband and wife, and

husband's hours of employment. Also included in the monograph are discussions on the need for and ways of measuring household production, previous studies of time spent on household work, and information on the methodology used in the 1967-68 study.

The study on which this monograph is based was supported, in part, by the U.S. Department of Agriculture. Several articles on the study have appeared previously in *FAMILY ECONOMICS REVIEW*.¹

The monograph is available for \$15.00 from the American Home Economics Association, 2010 Massachusetts Avenue NW., Washington, D.C. 20036.

¹ Walker, K. E., Time spent in household work by homemakers, *Family Economics Review*, pp. 5-6, September 1969; and Walker, K. E., Time used by husbands for household work, *Family Economics Review*, pp. 8-11, June 1970.

NEW YORK FAMILY BUDGET ANNUAL PRICE SURVEY

The Community Council of Greater New York has issued its "Annual Price Survey," that reflects budget costs in October 1975 for self-supporting families in New York City. The Survey, which is updated and published each year, gives cost data for the "Family Budget Standard" revised by the Community Council in 1970. The budget is an adaptation of the 1966 Bureau of Labor Statistics *City Worker's Family Budget* for a four-person family and the *Retired Couple's Budget*. It provides budget components such as food, clothing, medical care, and housing. The kinds of goods and services used to determine the cost of the budget

are typical of purchases made by families with moderate income.

The "Family Budget Standard" provides a basis for (1) assessing the economic status of the family, (2) counseling families on money management, and (3) determining either the eligibility of families for free social and health services or fees for these services based on ability to pay.

The "Annual Price Survey" is available for \$6, and the "Family Budget Standard" for \$4 from the Community Council of Greater New York, 225 Park Avenue South, New York, N.Y. 10003.

COST OF FOOD AT HOME

Cost of food at home estimated for food plans at four cost levels, June 1976, U.S. average ¹

Sex-age groups	Cost for 1 week			Cost for 1 month				
	Thrifty plan	Low-cost plan	Moderate-cost plan	Liberal plan	Thrifty plan	Low-cost plan	Moderate-cost plan	Liberal plan
<i>Dollars</i>								
<i>Dollars</i>								
FAMILIES								
Family of 2: 2								
20-54 years	22.30	29.30	36.70	44.20	97.10	126.70	159.20	191.60
55-years and over	19.90	25.80	32.10	38.60	86.70	112.20	139.20	166.90
Family of 4:								
Couple, 20-54 years and children--								
1-2 and 3-5 years	31.60	41.10	51.30	61.70	137.60	178.00	222.40	267.50
6-8 and 9-11 years	38.30	49.70	62.40	75.10	166.00	215.30	270.30	325.20
INDIVIDUALS ³								
Child:								
7 months to 1 year	4.50	5.60	6.80	8.10	19.60	24.20	29.60	35.00
1-2 years	5.10	6.60	8.10	9.70	22.30	28.60	35.30	42.10
3-5 years	6.20	7.90	9.80	11.80	27.00	34.20	42.40	51.20
6-8 years	8.00	10.30	12.90	15.50	34.50	44.50	55.80	67.10
9-11 years	10.00	12.80	16.10	19.40	43.20	55.60	69.80	83.90
Male:								
12-14 years	10.70	13.70	17.10	20.60	46.20	59.30	74.30	89.30
15-19 years	11.70	15.10	19.00	22.90	50.80	65.50	82.10	99.00
20-54 years	11.20	14.70	18.60	22.50	48.70	63.80	80.60	97.40
55-years and over	9.90	12.90	16.10	19.40	43.10	55.90	69.60	83.90
Female:								
12-19 years	9.50	12.20	15.10	18.10	41.10	52.90	65.60	78.50
20-54 years	9.10	11.90	14.80	17.70	39.60	51.40	64.10	76.80
55 years and over	8.20	10.60	13.10	15.70	35.70	46.10	56.90	67.80
Pregnant	11.40	14.70	18.10	21.60	49.60	63.60	78.40	93.60
Nursing	12.20	15.60	19.40	23.20	52.70	67.60	84.00	100.30

¹ Assumes that food for all meals and snacks is purchased at the store and prepared at home. Estimates for each plan were computed from quantities of foods published in the Winter 1976 (thrifty plan) and Winter 1975 (low-cost, moderate-cost, and liberal plans) issues of *Family Economics Review*. The costs of the food plans were first estimated using prices paid in 1965-66 by households from USDA's Household Food Consumption Survey with food costs at four selected levels. These prices are updated by use of "Estimated Retail Food Prices by Cities" released monthly by the Bureau of Labor Statistics.

² 10 percent added for family size adjustment. See footnote 3.

³ The costs given are for individuals in 4-person families. For individuals in other size families, the following adjustments are suggested: 1-person--add 20 percent; 2-person--add 10 percent; 3-person--add 5 percent; 5-or-6-person--subtract 5 percent; 7-or-more-person--subtract 10 percent.

CONSUMER PRICES

Consumer price index for urban wage earners and clerical workers

(1967 = 100)

Group	June 1976	May 1976	Apr. 1976	June 1975
All items	170.1	169.2	168.2	160.6
Food	180.9	180.0	179.2	174.4
Food at home	179.7	178.8	178.1	174.9
Food away from home	185.6	184.8	183.8	173.1
Housing	176.5	175.6	174.9	166.4
Shelter	178.2	177.3	176.6	169.4
Rent	144.4	143.8	143.2	136.9
Homeownership	190.7	189.6	188.9	181.4
Fuel and utilities	181.7	180.2	179.3	166.9
Fuel oil and coal	247.3	246.2	246.6	230.6
Gas and electricity ..	188.5	186.1	184.4	169.4
Household furnishings and operation	168.5	167.9	167.4	158.1
Apparel and upkeep	146.9	146.8	145.7	141.4
Men's and boys'	146.7	147.3	146.0	142.1
Women's and girls'	140.9	140.6	139.2	136.3
Footwear	149.5	149.6	149.0	143.8
Transportation	165.9	163.5	161.3	149.8
Private	165.0	162.5	160.1	149.3
Public	173.6	172.4	172.4	154.1
Health and recreation	162.8	162.1	161.4	153.2
Medical care	183.7	182.6	181.6	168.1
Personal care	159.8	158.9	158.3	150.3
Reading and recreation .	150.9	150.3	149.5	144.1
Other goods and services	153.2	152.9	152.5	147.3

Source: U.S. Department of Labor, Bureau of Labor Statistics.

Index of prices paid by farmers for family living items

(1967 = 100)

Item	June 1976	May 1976	Apr. 1976	June 1975	May 1975	Apr. 1975
All items	175	174	174	166	164	163
Food	184	---	---	179	---	---
Clothing	---	185	---	---	174	---
Housing	177	176	176	167	167	166
Medical and health	183	182	181	167	166	165
Education, recreation, and other	153	152	152	147	146	146

Source: U.S. Department of Agriculture, Statistical Reporting Service.

Note: Housing includes: household operation, household furnishings, and building materials. These categories were previously given separately.

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FOOD FOR THE BABY

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ARS-NE-36

Consumer and Food Economics Institute
Agricultural Research Service
U.S. DEPARTMENT OF AGRICULTURE

FAMILY ECONOMICS REVIEW is a quarterly report on research of the Consumer and Food Economics Institute and on information from other sources relating to economic aspects of family living. It is prepared primarily for home economics agents and home economics specialists of the Cooperative Extension Service.

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FOOD FOR THE BABY...COST AND NUTRITIVE VALUE CONSIDERATIONS

by Betty Peterkin and Susan Walker

How much does it cost to feed a baby? The answer, for the baby's first year alone, may differ by \$100 or more, depending on the foods selected for the baby's diet. The cost in Washington, D.C., in July 1976 and the nutritive value of some foods the baby may eat are shown here to illustrate the economic and nutritional implications of certain selections.

We do not, for the sake of economy or any other reason, suggest that all mothers should (or should not) breast feed their babies, use a certain formula, or prepare foods their babies eat at home rather than buy commercially prepared ones. These are decisions the parents must make, in consultation with their doctor or other child health professional.

Milk or Formula

The kind of milk used is a major factor in the cost of feeding the baby. Mother's milk is a safe, convenient, and economical form of milk for the baby, and authorities in infant nutrition recommend that breast feeding be encouraged (2).¹ But mother's milk is not free to the family. Indeed, it may be more costly than some types of formula. The mother who breast feeds her baby must eat more food than the mother who does not to provide adequate milk for her baby and not jeopardize her own health. For example, food in the USDA's thrifty food plan for the lactating woman costs about \$3 more per week than food in the thrifty plan for the nonlactating woman. Food in the liberal plan for the lactating woman costs over \$5 more than that in the liberal plan for the nonlactating woman (see *Cost of Food at Home* on p. 26). In addition, about 50 cents per week is required for a supplement containing vitamin D, usually recommended for the infant who is breast fed. Using these estimates, the total cost to the family of breast feeding the infant in early months of life is \$3.50 to \$5.50 per week. Formula for a baby, on the other hand, may cost \$2.80 to \$19.70 a

week, depending on the kind of formula used and the container in which it is purchased.

For mothers who choose not to breast feed their babies, the doctor will prescribe a formula. The formula may be made from evaporated milk or whole fluid pasteurized milk; it may be made by adding sterilized water to commercially prepared formula in concentrated or powdered form; or it may be ready-to-use commercially prepared formula. The cost of various types of formulas differs widely. For example, in Washington, D.C., the July 1976 weekly cost of milk-based formula for the baby taking five 6-oz bottles (30 fl oz) daily was—

- \$2.81, if made from whole fluid pasteurized milk fortified with vitamin D, purchased in half-gallon cartons, and sugar.²
- \$2.88, if made from evaporated milk fortified with vitamin D, purchased in 13-fl-oz cans, and sugar.²
- \$4.77, if made from concentrated formula, purchased in 13-fl-oz cans.
- \$5.01, if made from powdered formula, purchased in 1-lb cans.
- \$6.50, if purchased in ready-to-use 32-fl-oz cans.

According to these cost estimates, the family using commercially prepared ready-to-use formula might spend \$100 more during the baby's first 6 months than a family using formula made from evaporated milk or whole fluid milk and sugar.

The family using commercially prepared formula can save small amounts of money by buying it by the case or the six-pack. Savings of about 26 cents a week result if 13-fl-oz cans of concentrated formula are purchased in cases of 24, rather than singly. Only 6 cents per week is saved if 32-fl-oz cans of ready-to-use formula are purchased in cases of 6, rather than singly.

¹Italicized numbers in parentheses refer to References at end of this article.

²Includes an allowance of 50 cents per week for juice or a supplement to provide ascorbic acid (vitamin C), usually recommended with this formula.

The cost of ready-to-use formula is increased by more than one-half if bought in "serving-size" cans, and is doubled or tripled if bought in disposable bottles rather than 32-fl-oz cans. Although more expensive, the small cans and bottles of formula may be the only safe source of milk in some home situations and while traveling. A week's supply for the baby having 30 fluid ounces daily of ready-to-use formula costs—

- \$9.58 from a six-pack of 8-fl-oz cans.
- \$13.00 from a six-pack of 8-fl-oz bottles.,
- \$14.42 from a case of 24 6-fl-oz bottles.
- \$19.68 from a case of 48 4-fl-oz bottles.

Leading brands of commercially prepared milk-based formula cost about the same. Formula fortified with iron is available at the same cost as formula without iron added. Soy-based formula, developed for babies who cannot tolerate milk, costs slightly more than milk-based formula.

Ready-to-use formula and commercially prepared concentrated and powdered formulas, when reconstituted, resemble each other in that they supply 20 calories per fluid ounce. They are fortified so that a quart of formula provides recommended amounts of vitamins A, C, D, and several B vitamins. These formulas provide needed protein and calcium and, if fortified, provide substantial amounts of iron. Evaporated milk and whole fluid pasteurized milk usually are fortified with vitamin D but provide little ascorbic acid (vitamin C) or iron. Therefore, formula from these milks should be supplemented with food or pharmaceutical sources of these nutrients, as recommended by a doctor (5). Unfortified evaporated or whole milk formulas and mother's milk should be supplemented with vitamin D as well.

Foods Other Than Milk or Formula

The baby does not necessarily need food other than breast milk or formula until he is at least 6 months old (5, 14). However, infant cereal, fruit juice, and a variety of strained foods are usually introduced sometime during the first 6 months as a transition to eating "table foods." Through their use the infant becomes accustomed to foods that, along with

milk, will provide needed nutrients in later months.

Cereal. Precooked dry infant cereal mixed with water or formula is usually the first solid food given to the baby. A few spoonfuls a day of this dry cereal, introduced by 3 to 4 months of age, as recommended by a doctor, may be increased to a half ounce or more twice a day. Many infant cereals—rice, barley, oatmeal, mixed, and high protein—are available. They are convenient to use and, as indicated by information about the instant cereal in table 1, are economical sources of several nutrients. Infant cereal and milk are counted on as principal sources of many nutrients—protein, calcium, iron, thiamin, riboflavin, and niacin—even after strained foods are introduced into the baby's diet.

Infant cereal is valued as a source of iron which is needed for the prevention of iron deficiency anemia among babies. It is important as a source of iron especially in babies' diets consisting mainly of mother's milk, formula that is not fortified with iron, or cow's milk. Customary servings of other types of baby foods contain either no iron or much less iron. In addition, they are much more expensive than a customary serving of infant cereal. The continued use of infant cereal is one practical solution to the otherwise difficult problem of supplying iron to infants between 6 and 18 months of age (13). Regular cereals, such as oatmeal, grits, and some farina, that require cooking and do not have iron added, are less expensive than infant cereals. However, such cereals do not provide enough iron to insure that the baby will get recommended amounts when reasonable quantities are served.

The cost advantage of buying the large package of infant cereal rather than the small one is apparent when their unit prices shown in most supermarkets are compared. The unit price, or the price per pound, for each brand and package size of cereal usually is shown on the shelf on which the cereal is displayed. In Washington, D.C., the July 1976 cost of a pound of mixed instant cereal was—

- \$0.59 from the 1-lb package.
- \$0.72 from the 8-oz packages.
- \$1.15 from packages of six individual 1-oz packets.

Table 1. Cost and nutritive value of selected baby foods ¹

Food	Amount	Cost ²	Percentage of U.S. Recommended Daily Allowance ³ for--								Food energy	Carbo- hydrate	Fat	Sodium ⁴
			Pro- tein	Vit. A value	Vit. C	Thia- mine	Ribo- flavin	Niacin	Cal- cium	Iron				
Cents														
Milk, fluid, whole ⁵	8 fl oz	5.1	47	23	6	14	68	2	48	1	159	12.0	8.5	122
Commercially prepared formula without iron added, ready-to-use ...	8 fl oz	24.8	20	33	36	28	32	23	22	6	160	16.8	8.6	(⁷)
Instant cereal, mixed, dry	$\frac{1}{2}$ oz	2.2	8	(⁷)	(⁷)	72	58	36	24	77	52	4.4	.2	10
Teething biscuits	$\frac{1}{2}$ oz	5.3	6	(⁷)	(⁷)	11	10	4	11	2	54	9.1	.6	66
Strained baby food, commercially prepared: ⁸														
Orange juice, strained	3 $\frac{1}{2}$ oz	12.9	2	7	111	10	3	3	2	3	52	11.8	.3	1
Mixed cereal with apples and bananas ...	3 $\frac{1}{2}$ oz	14.1	5	(⁷)	⁴ 33	9 33	9 33	9 33	1	9 33	84	18.9	.4	70
Beef with beef broth .	3 $\frac{1}{2}$ oz	39.0	74	(⁷)	8	4	28	32	2	11	112	(⁷)	6.5	166
Chicken with chicken broth	3 $\frac{1}{2}$ oz	39.0	73	(¹⁰)	5	4	27	42	5	8	123	.1	7.8	156
Beef with vegetables (high meat)	3 $\frac{1}{2}$ oz	23.4	32	59	7	8	12	27	2	5	89	5.7	4.8	127
Chicken with vegeta- bles (high meat)	3 $\frac{1}{2}$ oz	23.4	34	50	9	2	8	24	6	6	88	5.8	4.5	130
Chicken noodle dinner	3 $\frac{1}{2}$ oz	14.8	12	32	5	12	8	8	3	3	50	7.4	1.3	111
Macaroni, tomatoes, beef	3 $\frac{1}{2}$ oz	14.8	14	32	4	22	12	12	3	3	71	8.8	2.9	155
Carrots	3 $\frac{1}{2}$ oz	14.8	3	\$64	15	4	5	5	4	3	35	7.6	.1	140
Green beans	3 $\frac{1}{2}$ oz	14.8	5	18	14	8	13	4	6	5	29	5.3	.2	105
Pears	3 $\frac{1}{2}$ oz	14.1	2	(⁷)	⁹ 33	4	3	2	2	2	72	17.2	.2	6
Applesauce	3 $\frac{1}{2}$ oz	14.1	1	(⁷)	8	2	3	1	1	2	82	20.0	.1	8
Apple dessert	3 $\frac{1}{2}$ oz	14.1	1	1	17	2	5	1	3	1	100	23.0	.8	16
Fruit dessert	3 $\frac{1}{2}$ oz	14.1	1	11	10	4	2	1	1	2	97	23.6	.2	36
Vanilla custard	3 $\frac{1}{2}$ oz	14.8	6	7	6	2	15	1	8	2	94	17.9	1.7	95

¹Costs and nutritive values are averages for foods from 3 major baby food manufacturers, except for fluid whole milk.²Prices in Washington, D.C., July 1976.³Allowance specified for use in nutritional labeling of foods for infants by the Food and Drug Administration. Title 21. Code of Federal Regulations CF2(10-199). 125.1 b. Percentages in this table have not been rounded as required for use on food labels.⁴Sodium content varies depending on the amount of salt added.⁵Derived from nutritive values given in "Composition of Foods...raw, processed, prepared" (15).⁶Commercially prepared formula with iron added provides about 19 percent of the U.S. Recommended Daily Allowance (RDA).⁷Value judged to be insignificant or was not determined by manufacturers.⁸Values shown for baby foods are for 100 grams (approximately $\frac{3}{4}$ oz) of food. Cans of fruit juice contain 4.2 fl oz, jars of strained meat contain $\frac{3}{4}$ oz, and jars of other strained foods contain $\frac{4}{5}$ to $\frac{3}{4}$ oz.⁹Products vary widely in content depending on the amount, if any, of the nutrient added. Value is for product with nutrient added.¹⁰Only 1 of 3 manufacturers gave a value. It represented 19 percent of the U.S. RDA.

Dry infant cereals mixed with fruits commercially cost more than plain dry infant cereals. For example, cereals with bananas cost about a third more than an equal weight of infant cereal without bananas. Strained mixed cereal with apples and bananas in jars cost four times as much as dry infant cereal when costs of amounts to provide equal calories are compared. Unless it is fortified with iron, thiamin, riboflavin, and niacin, strained cereal provides considerably less of these nutrients than dry infant cereal. Teething biscuits cost over twice as much as an equal weight of infant cereal. They provide about the same amount of food energy and protein but cannot be counted on to replace cereal as a source of vitamins and minerals.

Fruit juice. Strained orange juice and fortified apple and mixed fruit juices are rich sources of vitamin C. A $\frac{1}{2}$ -cup (4-fl-oz) serving of any of these juices daily supplies the infant's recommended allowance (35 mg) abundantly. Commercially prepared strained orange juice is more expensive than juice squeezed from fresh oranges or juice reconstituted from frozen concentrate. In Washington, D.C., in July 1976 strained orange juice cost about $1\frac{1}{2}$ times as much as fresh orange juice and 4 times as much as that made from frozen concentrate (table 2).

Strained baby foods. In addition to infant cereals and strained fruit juices, the market offers a wide assortment of commercially prepared strained baby foods—meats, vegetables, fruits, and mixtures, such as soups, breakfasts, dinners, and desserts. These foods varied in cost from 14 to 39 cents per $3\frac{1}{2}$ ounces in Washington in July 1976 and were more costly as sources of food energy than breast milk and most formulas that they replace in the baby's diet. Because of these cost relationships and the fact that strained foods are unnecessary as sources of essential nutrients during early months of life, there appears to be a practical advantage in avoiding their early introduction especially for babies in families with low incomes.

Baby foods, like the foods adults eat, vary in the amounts of different nutrients they provide. For example, meats stand out as worthwhile sources of protein, iron, and certain B vitamins; vegetables make important contributions of vitamin A; and orange juice

and juices and fruits that are fortified with vitamin C provide substantial amounts of this nutrient. "High-meat" dinners, containing meat and vegetables, provide worthwhile amounts of several nutrients. (In high-meat dinners the meat appears first in the name—beef with vegetables and chicken with vegetables, for example—indicating that meat is the principal ingredient.) The protein content of high-meat dinners is only about one-half that of strained meats, such as beef with broth, but about three times that of other dinners, such as macaroni, tomatoes, and beef. Depending on their ingredients, baby food dinners may provide more of certain nutrients than strained meat alone. For example, those containing vegetables provide more vitamin A and those containing noodles or macaroni provide more thiamin than meat.

Strained fruits and desserts, which account for a high percentage of baby food sales, provide food energy but, unless fortified, do not provide worthwhile amounts of nutrients. Sugar is added to all strained fruit. Sugar and modified corn or tapioca starch, or both, are ingredients in all desserts. These ingredients increase carbohydrate and food energy levels. The frequent use of strained fruit and desserts in place of formula and cereal may result in diets that are short in nutrients.

Home-Prepared vs. Commercially Prepared

Infants can be fed safely and well and usually at lower cost if home-prepared rather than commercially prepared foods are used (table 2). This assumes that simple, economical, and nourishing foods are prepared and served at home with minimal contamination. With a blender or food chopper, a freezer, and a little advance planning, the preparation of a variety of strained baby foods may not be difficult. Foods prepared for family meals that are suitable for the baby can be pureed for immediate use or quick-frozen in small sterilized containers or ice-cube trays for later use. Some foods of soft consistency, such as cooked potatoes and ripe bananas, need only to be mashed or whipped until smooth. On the other hand, commercially prepared baby foods are a great convenience to the busy mother and may be well worth the additional cost. In homes where hygienic preparation and storage

Table 2. Cost and nutritive value of 100 grams (approximately 3½ oz) of selected strained baby foods prepared commercially and at home¹

Food	Cost ²	Percentage of U.S. Recommended Daily Allowance ³ for---							Food energy <i>Kcal</i>	Carbo- hydrate <i>G</i>	Fat <i>G</i>	Sodium ⁴ <i>Mg</i>	
		Pro- tein	Vit. A value	Vit. C	Thia- mine	Ribo- flavin	Niacin	Cal- cium					Iron
<i>Cents</i>													
ORANGE JUICE, prepared--													
Commercially	12.9	2	7	111	10	3	3	2	3	52	11.8	0.3	
At home (from fresh)	8.8	4	13	140	18	5	5	2	2	47	10.5	.3	
At home (from frozen concentrate)	3.2	3	13	129	18	2	4	2	1	45	10.7	.1	
BEEF, prepared--													
Commercially (with broth) .	39.0	74	(⁵)	8	4	28	32	2	11	112	(⁵)	166	
At home (lean only)	36.3	167	1	(⁶)	10	38	58	2	25	214	0	60	
CHICKEN, prepared--													
Commercially (with broth) .	39.0	73	(⁷)	5	4	27	42	5	8	123	.1	156	
At home (flesh only)	23.1	166	7	(⁶)	12	27	108	2	10	171	0	75	
CARROTS, prepared--													
Commercially	14.8	3	564	15	4	5	5	4	3	35	7.6	.1	
At home (from fresh)	7.9	4	700	17	10	8	6	6	4	31	7.1	.2	
At home (from canned)	9.8	3	1,000	6	4	5	5	5	5	30	6.7	.3	
GREEN BEANS, prepared--													
Commercially	14.8	5	18	14	8	13	4	6	5	29	5.3	.2	
At home (from fresh)	15.5	6	36	34	14	15	6	8	4	25	5.4	.2	
At home (from canned)	14.0	6	31	11	6	8	4	8	10	24	5.2	.2	
At home (from frozen)	14.5	6	39	14	14	15	5	7	5	25	5.7	.1	
PEARS, prepared--													
Commercially	14.1	2	(⁵)	(⁴)	4	3	2	2	2	72	17.2	.2	
At home (from fresh)	13.8	3	1	3	4	7	1	2	2	61	15.3	.4	
Applesauce, prepared--													
Commercially	14.1	1	(⁵)	8	2	3	1	1	2	82	20.0	.1	
At home (from fresh)	8.3	1	3	6	6	3	1	1	2	54	14.1	.3	
At home (from canned applesauce)	6.5	1	3	3	4	2	0	1	3	41	10.8	.2	

¹For commercially prepared foods the costs and nutritive values are averages for foods from 3 major baby food manufacturers; and for home-prepared foods nutritive values are derived from "Composition of Foods...raw, processed, prepared" (15).

²Prices in Washington, D.C., July 1976.

³Allowance specified for use in nutritional labeling of foods for infants by the Food and Drug Administration. Title 21. Code of Federal Regulations CF2(10-199). 125.1 b. Percentages in this table have not been rounded as required for use in food labels.

⁴Products vary widely in content depending on the amount, if any, of the nutrient added.

⁵Value judged to be insignificant or was not determined by manufacturers.

⁶Insufficient data available to provide a reliable value.

⁷Only 1 of 3 manufacturers gave a value. It represented 19 percent of the U.S. Recommended Daily Allowance.

of foods cannot be assured, commercially prepared foods may be a means of safeguarding the baby's health.

Modern methods of baby food processing are developed to minimize destruction of vitamins in the ingredients of baby foods. However, baby foods prepared by using proper procedures at home are as nutritious as commercially prepared ones; some are more nutritious. Because of the low total solids content of some commercially prepared baby foods and the addition of sugar or starch to many, concentrations of protein, vitamins, and minerals are likely to be less than for corresponding foods prepared in the home. Beef and chicken pureed at home provide more of most nutrients than commercially strained beef and chicken—chiefly because they contain less water. Home-prepared beef and chicken with broth added would provide less nutrients and cost less than home-prepared beef and chicken without broth.

Some consider lower sodium content of home-prepared meats, vegetables, and meat-vegetable mixtures for the baby an advantage. Home-prepared meat without added salt has a lower sodium content than commercially strained meat. Similarly, sodium levels of vegetables and of meat and vegetable mixtures can be controlled in home preparation, if fresh or unsalted frozen foods are used in their preparation. Baby foods prepared at home from canned meat or vegetables frequently contain more sodium than similar commercially prepared baby foods. Baby food manufacturers

voluntarily limit the level of salt added to baby foods to no more than 0.25 percent, as recommended by a special committee of the National Academy of Science-National Research Council.

Recipe changes are made frequently in the formulation of baby foods, reflecting new information about infant nutrition, advances in food technology, and new regulations of the Food and Drug Administration. Because of such changes the nutritive values of baby foods published by the manufacturers, used as the basis for this article, may not represent exactly the product as currently marketed. Information on the label of baby foods that shows the list of ingredients and frequently the nutritive value of a serving, provides a basis for making selections of foods as marketed. Prices in Washington, D.C., in July 1976 were used for estimating costs in this article. Obviously, prices in other places and at other times might differ.

Other Considerations

In addition to the nutritive value and cost of foods, other considerations are important in making decisions about the foods the baby eats. Some major considerations are the physical condition of the child; whether the mother is employed outside the home; the capability of the person or persons responsible for the care of the baby; and whether the home facilities are adequate for sanitation, refrigeration, and storage of food.

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CONSUMER EXPENDITURES SURVEY, 1972 AND 1973

The Bureau of Labor Statistics (BLS), U.S. Department of Labor, completed its most recent Consumer Expenditure Survey (CES) in June 1974. The survey, covering the years 1972 and 1973, is the only comprehensive source of detailed information on family expenditures and income related to socioeconomic and demographic characteristics of U.S. families. It was undertaken in part to revise the weights and associated pricing samples in the current Consumer Price Index and in part to obtain timely, accurate, and detailed information on how American families earn and spend their income.

The 1972-73 survey, the eighth major survey of this type, and the first since 1960-61, consisted of two separate components: (1) A diary or recordkeeping survey completed by respondents for two 1-week periods and (2) an interview panel survey in which families reported information to interviewers every 3 months over a 15-month period.¹

Preliminary data from the diary survey and from the interview panel survey have been released by BLS in several reports.²

¹ Background concerning the design, conduct, and uses of both components of the survey appears in "The 1972-73 Consumer Expenditure Survey," published in the December 1974 issue of the *Monthly Labor Review*.

² CES reports may be obtained by writing to

Diary Data

- BLS Report 448-1. First-year data, cross tabulations, selected average weekly expenditures covering the period July 1972—June 1973. (Issued November 1975.)
- BLS Report 448-2. Second-year diary data, one-way tabulations, selected average weekly expenditures, covering the period July 1973—June 1974. (Issued April 1976.)
- BLS Report 448-3. Selected weekly expenditures cross-classified by family characteristics. (Issued August 1976.)

Interview Panel Data

- BLS Report 455-1. Motor vehicle purchases and repairs, selected average annual data from 2-year interview survey for 1972 and 1973. (Issued February 1976.)
- BLS Report 455-2. Average annual expenditures and service groups classified by family characteristics, 1972 and 1973. (Issued May 1976.)

Information Office, Bureau of Labor Statistics, U.S. Department of Labor, 441 G Street, NW., Room 1539, Washington, D.C. 20210.

NUTRITIVE VALUE AND COST OF "FAST FOOD" MEALS¹

by Pamela Isom

How nutritious are "fast foods" and how much do they cost compared with similar home-prepared foods? Some comparisons we have made show that foods from McDonald's Restaurant (fast foods) are as nutritious as similar foods from home but cost twice as much. We chose McDonald's primarily because detailed food composition information is available for foods they serve.² Other research has shown that items such as hamburgers and cheeseburgers from McDonald's, Burger King, and Burger Chef are remarkably similar in proximate composition although the larger specialty burgers from these franchises may differ because of their size.³

Nutritive values for food at home were taken from USDA's "Nutritive Value of Foods," Home and Garden Bulletin No. 72. The amounts of major ingredients in sandwiches served at McDonald's were verified for reasonableness by McDonald's Corporation, and then duplicated as closely as possible in home-prepared sandwiches. The home-prepared apple pie and milkshake were made from recipes commonly used at home, and commercially frozen french fries were used to make the home-prepared fries.

Nutritive Value

Meals. The nutritive values of seven meal-type combinations of foods from McDonald's and corresponding meals prepared at home are similar (table 1). Most differences probably

result from the lack of comparability of data, rather than real differences in the nutritional quality of the meals. Whether bought at McDonald's or prepared at home, the nutritive value of each meal depends principally on the foods it contains.

Of the seven fast-food-type meals, five provide one-fifth or more of the U.S. Recommended Daily Allowance (U.S. RDA) for protein, thiamin, riboflavin, and ascorbic acid. None of the meals provide much vitamin A. Only the meal with the milk shake exceeds one-fifth of the U.S. RDA for calcium.

Fat levels in most of these meals are not excessive. In some, the percentage of food energy (calories) provided by fat is lower than 35 percent—the upper limit suggested for the total diet by the American Heart Association. In all except the Big Mac meal, fat provides less than 42 percent of calories—the average level in U.S. diets.

The fast-food-type meals provide a greater share of the U.S. RDA for food energy than for some nutrients when an allowance of 2,600 calories is assumed. For people who have energy allowances lower than 2,600 calories—women and young children, for example—the percentage of the allowance for food energy provided by these meals would be even higher. Therefore, the remainder of the day's food must be selected carefully to provide recommended amounts of nutrients without excess calories. Other meals and snacks must include especially good sources of vitamin A and possibly calcium to supplement the fast-food meal.

Individual food items. A comparison of the nutritive value of individual food items shows that McDonald's sandwiches provide more of some nutrients and less of others than similar sandwiches made at home using standard cooking procedures (table 2). For example, thiamin values are consistently lower, while riboflavin values are higher for McDonald's sandwiches than for sandwiches made at home. Buns in the sandwiches made at home assume

¹ Company names are used in this publication solely for the purpose of providing specific information. Mention of company name does not constitute a guarantee or warranty of their product by the U.S. Department of Agriculture or an endorsement by the Department over other companies not mentioned.

² "Nutritional Analysis of Food Served at McDonald's Restaurants," based on a nationwide study by the WARF Institute, January 1973, for McDonald's Corporation, Oak Brook, Ill. 60521.

³ Appledorf, H. "Nutritional Analysis of Foods for Fast-food Chains." *Jour. Food Tech.*, pp. 50-55, April 1974.

Table 1. Nutritive value and cost of meals from McDonald's Restaurant and meals prepared at home ¹

Food and source	Percentage of food energy ²	Nutrient, percent of U.S. Recommended Daily Allowance						Percentage of food energy from fat	Cost ³	
		Protein	Vit. A value	Thiamin	Ribo-flavin	Calcium	Iron		Ascorbic acid	Actual dollars	Percentage related to home-prepared
Hamburger, french fries, soft drink: McDonald's	22	24	3	19	24	6	16	21	0.80	178
Home-prepared	24	31	2	24	18	6	22	27	.45	100
Hamburger, french fries, chocolate shake: McDonald's	30	42	3	25	57	47	21	21	1.00	189
Home-prepared	32	46	13	29	46	38	28	30	.53	100
Hamburger, french fries, soft drink, apple pie: McDonald's	32	28	3	20	26	8	19	24	1.05	202
Home-prepared	33	34	2	30	22	7	23	28	.52	100
Cheeseburger, french fries, soft drink: McDonald's	24	29	6	21	32	15	15	21	.88	176
Home-prepared	26	37	5	24	22	16	23	27	.50	100
Big Mac, french fries, soft drink: McDonald's	33	45	4	25	40	17	23	23	1.25	216
Home-prepared	32	43	6	31	27	18	27	27	.58	100
1/2-lb hamburger, french fries, soft drink: McDonald's	28	45	5	23	39	8	24	20	1.15	209
Home-prepared	29	46	2	28	24	8	29	27	.55	100
Fillet of fish, french fries, soft drink: McDonald's	28	28	2	23	23	10	11	17	1.05	210
Home-prepared	24	26	1	23	14	6	13	27	.50	100

¹Nutritive values of commercially prepared foods from "Nutritional Analysis of Food Served at McDonald's Restaurants" based on a nationwide study by the WARF Institute, Madison, Wis., January 1973, for McDonald's Corporation; of home-prepared from "Nutritive Value of Foods," HG-72.

²An allowance arbitrarily set at 2,600 kcal. Recommended Dietary Allowance (1974) set by the National Academy of Science-National Research Council is 2,100 kcal for a teenage girl and 3,000 kcal for a teenage boy.

³Prices from Washington, D.C., area July 1976.

Table 2. Nutritive value and cost of food from McDonald's Restaurant and food prepared at home¹

Food and source	Percentage of food energy ²	Nutrient, percent of U.S. Recommended Daily Allowance						Percentage of food energy from fat	Cost ³	
		Protein	Vit. A value	Thiamin	Riboflavin	Calcium	Iron	Ascorbic acid	Actual dollars	Percentage related to home-prepared
Hamburger:										
McDonald's	10	20	3	12	21	5	14	6	0.30	125
Home-prepared	13	28	2	19	15	5	17	2	.24	100
Cheeseburger:										
McDonald's	12	25	6	13	30	14	13	6	.38	131
Home-prepared	15	34	5	19	19	15	18	2	.29	100
Big Mac:										
McDonald's	21	40	4	18	38	16	21	8	.75	203
Home-prepared	21	40	6	25	24	17	23	2	.37	100
1/4-lb hamburger:										
McDonald's	16	41	5	15	37	7	21	5	.65	191
Home-prepared	18	43	2	23	21	6	25	2	.34	100
Fillet of fish:										
McDonald's	16	24	2	15	21	9	9	2	.55	190
Home-prepared	13	23	1	17	11	5	8	2	.29	100
French fries:										
McDonald's	8	4	(4)	7	2	1	2	15	.30	231
Home-prepared	7	3	(4)	5	3	1	4	25	.13	100
Apple pie:										
McDonald's	10	3	(4)	(4)	2	2	3	3	.25	357
Home-prepared	8	3	(4)	6	4	1	1	2	.07	100
Chocolate shake:										
McDonald's	12	17	(4)	5	33	41	5	(4)	.40	267
Home-prepared	11	15	11	5	28	32	6	3	.15	100
Soft drink:										
McDonald's ⁵	4	(4)	0	0	0	0	0	0	.20	250
Home-prepared	4	(4)	0	0	0	0	0	0	.08	100

¹Nutritive values of commercially prepared foods from "Nutritional Analysis of Food Served at McDonald's Restaurants" based on a nationwide study by the WARF Institute, Madison, Wis., January 1973, for McDonald's Corporation; of home-prepared from "Nutritive Value of Foods," HG-72.

²An allowance arbitrarily set at 2,600 kcal. Recommended Dietary Allowance (1974) set by the National Academy of Science-National Research Council is 2,100 kcal for a teenage girl and 3,000 kcal for a teenage boy.

³Prices from Washington, D.C., area July 1976.

⁴Insignificant amount of nutrient present.

⁵No nutritive value for soft drink available from McDonald's. Values used were from "Nutritive Value of Foods," HG-72.

the higher levels for thiamin and riboflavin required for enriched buns, effective July 1, 1975. The McDonald's buns may now have more of the nutrients added than in 1973, when the McDonald's nutritive value study was made. The higher protein levels for the home-prepared hamburger and cheeseburger may be because the amount of ground beef assumed for the home-prepared items (2 oz) was greater than the amount in the McDonald's sandwiches, or because there was a higher proportion of protein in the ground beef used in the home-prepared burgers.

McDonald's shake, with a nonfat dry milk base, provides considerably more calcium and less fat than the shake made at home from whole milk and ice cream. The level of fat in the home-prepared shake would be lower, of course, if skim or nonfat dry milk were used. Because McDonald's shake is relatively free of milk fat, it contains an insignificant amount of fat-soluble vitamin A—a nutrient that is short in the fast-food-type meals.

The food energy provided by fat in the Big Mac and fillet of fish sandwich from McDonald's substantially exceeds amounts provided by their home-prepared counterparts. One explanation for this difference may be the amount of spread assumed to be on each sandwich. One tablespoon was used in the home-prepared sandwiches; McDonald's may use more. McDonald's apple pie has a higher level of fat than pie made at home—probably

due to a greater proportion of crust in the McDonald's pie.

French fries made at home supply more ascorbic acid than McDonald's fries, according to these estimates. However, this difference is probably not of great importance because of variation in ascorbic acid content due to variety of the potato, storage conditions, and method of preparation.

Cost

Meals from McDonald's are about twice as expensive as those made at home according to these comparisons, which are based on prices in the Washington, D.C., area in July 1976. One of the hamburger meals (table 1) and the cheeseburger meal cost 1.8 times as much as the home-prepared meals, while the Big Mac cost 2.2 times as much.

The cost relationships of the individual food items from McDonald's compared with those from home vary greatly. McDonald's hamburger and cheeseburger are the best buys, costing as little as one-fourth to one-third more than home-prepared ones. On the other hand, apple pie from McDonald's costs more than 3½ times as much as pie made at home.

Costs of meals prepared at home do not take into account the cost of fuel used in cooking or the value of time spent in shopping for food, preparing the meal, and cleaning up afterward. Expenses for travel to and from McDonald's are not considered.

WOMEN IN THE UNITED STATES

In July 1975, women represented 51.3 percent of the total population and outnumbered men by 5.6 million. The average age of all women was 30 years, with 12 percent 65 years old and over. In 1975, the average length of life for women was 76.4 years¹—an increase of 28.1 years since 1900. This contrasts with an increase in life expectancy for men of 22.2 years.

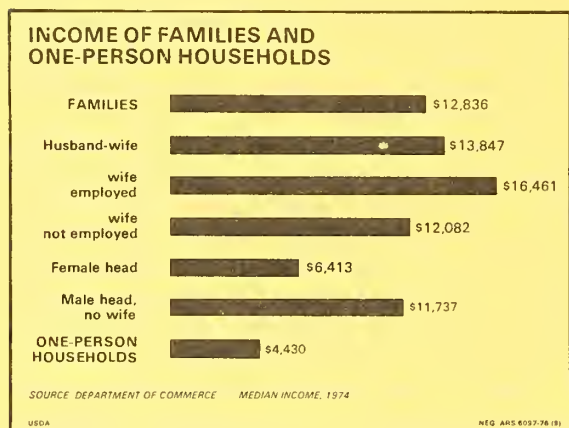
There are more single women than ever before. Changing marital patterns include later marriage and an increase in the rate of divorce. In 1975, 40 percent of women 20 to 24 years

of age were single, compared with 28 percent in 1950.

Women are better educated. The number of women 25 to 29 years old completing 4 years of college increased 73 percent between 1970 and 1975 with 19 percent of women 25 to 29 years old in this category in 1975. With the increase in female college students has come an increase in the number of women in traditional "male" majors. For example, the percentage of women enrolled in engineering increased from 2 percent in 1972 to 6.8 percent in 1974. Despite these increases, however, the number of women college graduates is only about three-fourths the number of male graduates.

¹ Preliminary figure.

Women have significantly increased their participation in the labor force. Between 1950 and 1976 the number of working women doubled, while the number of working men increased by about one-fourth. The sharpest increase in working women was among married women. In 1950 only about 25 percent of the married women were in the work force, but in 1975, 44 percent were in the work force. Working wives make significant contributions to the family income. The median income of husband-wife families in 1974 where the wife was not employed was \$12,082, compared with \$16,461 when the wife was employed.

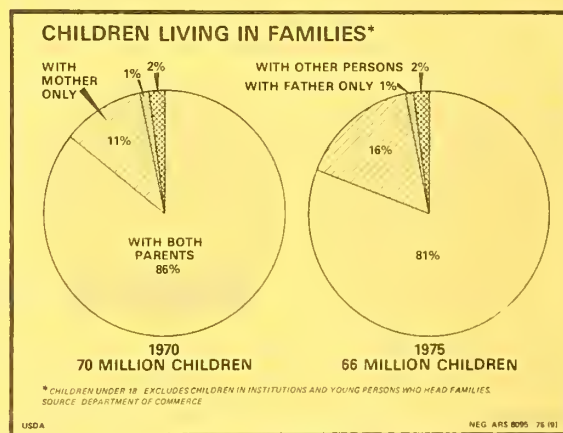


Declining fertility of women and expansion of the service sector of the economy have contributed to the trend for more working wives. Fertility, represented by the proportion of wives with children under 6, has declined markedly from approximately 32 percent in 1965 to 26 percent in 1975. The service sector, the industrial sector in which women most often hold jobs, has doubled since 1950, while the number working in the goods-producing sector has risen by only about a fifth. In 1975, 82 percent of all women working in nonagricultural industries were employed in the service sector where they held about 45 percent of the jobs.

Families with female heads numbered over 7 million in 1975—13 percent of all families. This represents a 73-percent increase since 1960. The median age of women who head families has decreased from 50.5 years in 1960 to 43.4 years in 1975. More of these women were working in 1975 (54.3 percent) than in 1960 (49.9 percent); however, their income has

not increased as greatly as the income of families headed by men. In 1974 the median income of female-headed families was 47 percent of the median income of male-headed families. Over 32 percent of all female-headed families are below the poverty level, as compared with only 6 percent of male-headed families.

One important problem resulting from the recent trends in women's employment and family patterns is that of child care and child rearing. Increasing proportions of children are living in families that do not follow the traditional family model of husband-breadwinner and wife-homemaker. In March 1970, 38 percent of all children under age 18 in husband-wife families where the head was in the labor force were in multiworker families—5 years later the proportion was 43 percent. Children of multiworker families may benefit from increased family income. In contrast, of the children who live in female-headed families, 50 percent are below the poverty level. In 1975, about 15 percent of all children living in families lived with their mothers only—an increase of 38 percent since 1970.



Sources: Hayghe, H., Families and the rise of working wives—an overview, *Monthly Labor Rev.* 99(5): 12-19, May 1976, U.S. Dept. of Labor. McEaddy, B.J., Women who head families: A Socioeconomic analysis, *Monthly Labor Rev.* 99(6): 3-9, June 1976, U.S. Dept. of Labor. U.S. Department of Commerce, Bureau of the Census, *Current Population Reports, A Statistical Portrait of Women in the U.S.*, Special Studies, Series P-23, No. 58, April 1976. U.S. Department of Labor, Employment Standards Adm., *1975 Handbook on Women Workers*, Bul. 297, 1975.

SPENDING ON MEDICAL CARE

Total Expenditures

Spending for medical care totaled \$118.5 billion in fiscal year 1975—an average of \$547 per person.¹ Between 1974 and 1975 spending increased 14 percent, a significantly higher increase than that between 1973 and 1974 when price controls in the health industry were in effect for most of the year. Since 1965, spending on medical care has tripled from \$38.9 billion to \$118.5 billion, and as a share of the Gross National Product, it has risen from 5.9 percent to 8.3 percent. Inflation has accounted for 53 percent of the increase in medical care spending between 1965 and 1975. Technological developments in areas such as equipment and drugs, the use of new lifesaving (but often costly) medical techniques, and greater use of medical care services accounted for 38 percent of the increase. Population growth has had relatively little effect on medical care spending in the past 10 years—accounting for only 9 percent of the increase.²

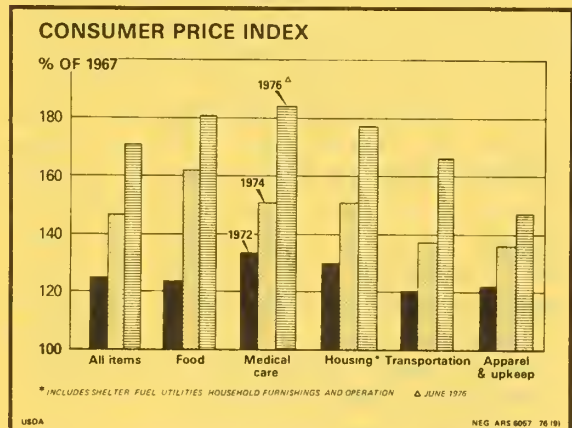
Types of Expenditures

Spending for health care services of direct benefit to the individual (personal health care), such as hospital care, physicians' services, and drugs, accounted for 87 percent of all medical care spending in 1975. Spending for research, construction, administration, and disease control and detection accounted for 13 percent (table 1).

Hospital care represents the largest share of the personal health care dollar. Approximately \$46.6 billion was spent on hospital care in 1975; this was 45 percent of the personal

health care bill. Expenditures for physicians' services was the second largest category, accounting for 22 percent of personal health care. Drugs and drug sundries accounted for 10 percent; nursing-home care accounted for 9 percent; and dentists' services accounted for 7 percent.

The Consumer Price Index for medical care was 183.7 in June 1976, higher than the index for all items—170.1, and the indexes for individual categories of food, housing, transportation, and apparel and upkeep (see chart). Medical care prices increased 9.3 percent between June 1975 and June 1976. The only major item increasing faster than medical care was transportation at a rate of 10.7 percent.



Hospital prices, as measured by semiprivate room charges, have risen faster since June 1975 than prices for any other medical care item. In June 1976, hospital prices were 265.1 on the Consumer Price Index, in comparison with an overall medical care index of 183.7 (table 2).

The cost to hospitals in 1974 of providing care was \$111 per adjusted patient day³—a jump of 178 percent since 1965. Wage increases accounted for 36 percent of the price rise, and higher prices paid by hospitals for goods and services accounted for 16 percent.

³This is the estimated cost of providing a day of in-patient hospital care adjusted to account for the volume of outpatient visits.

¹All years mentioned in this article refer to fiscal years, ending June 30. For example, fiscal year 1975 refers to the 12-month period—July 1, 1974 to June 30, 1975.

²The changing age distribution of the population toward more aged persons, however, increases the utilization of medical services, especially hospitals, and therefore contributes to the overall increase in spending for medical care. (In 1975, persons 65 years and over made up 10.5 percent of the population; in 1960, this group was 9.2 percent of the total population.)

Thus, over one-half the rise in cost during this period can be attributed to the additional expense necessary to maintain the same level of hospital services. The remainder of the cost rise was largely due to additional staff and acquisition of new equipment.

Hospital costs vary greatly between geographic regions. Costs were a third higher in metropolitan hospitals than in non-metropolitan facilities in 1973. The total expense per adjusted-patient-day ranged from \$70 in Mississippi to \$145 in Alaska. The cost level variation of hospital care can depend on a number of factors, including hospital characteristics and personal income level in the surrounding community. Patterns of medical practice, such as average length of hospital stay and intensity of care, vary geographically and

can affect costs. The average cost per day also will vary according to the volume of outpatient visits, because the cost of an outpatient visit is considerably less than that of an in-patient day.

Prices for professional services have also increased sharply in recent years. After the lifting of price controls of the Economic Stabilization Program, physicians' fees increased 13.4 percent and dentists' fees increased 11.2 percent.

Medical Care Funding

Public funding of personal health care is becoming increasingly more important. Public funds paid for about 40 percent of the 1975 personal health care bill, consumers paid out of pocket for 32 percent, and other private sources paid for 28 percent (table 3). Public

Table 1. National health expenditures by type of expenditure, 1975

Type of expenditure	Amount	Percentage of total	Percentage of type
	<i>Mil. dol.</i>		
Total	118,500	100	
Personal health care	103,200	87	100
Hospital care	46,600		45
Physicians' services	22,100		22
Drugs and drug sundries	10,600		10
Nursing-home care	9,000		9
Dentists' services	7,500		7
Other health services	3,000		3
Eyeglasses and appliances	2,300		2
Other professional services ..	2,100		2
Nonpersonal health care	15,300	13	100
Expenses for prepayment and administration	4,593		30
Construction	4,500		29
Government public health activities	3,457		23
Research	2,750		18

Source: Mueller, M. S., and Gibson, R. M. National health expenditures, fiscal year 1975. *Soc. Sec. Bul.* 39(2): 3-20, 1976. U.S. Dept. Health, Education, and Welfare.

spending for personal health care increased more than 22 percent between 1974 and 1975—about twice the increase for private spending. In 1975, 55 percent of hospital care was paid for by public funds and 37 percent was paid by private funds. Payment for physicians' services came almost equally from public funds, private funds, and direct payments by consumers. Dentists' services and drugs were paid for almost entirely through direct payments by consumers.

Public funds for health care came from all levels of government—Federal, State, and local. The Federal share of total public spending always has been the largest, but with the advent of Medicare and Medicaid it became dominant, jumping from 42 percent of public spending in fiscal 1966 to 60 percent in 1967—the first full year of the two programs. In 1975, the Federal share of public spending was 67.5 percent. Expansion of the Medicare and Medicaid programs accounted for 72 percent of the overall rise in public spending in 1975. The Medicare program cost almost \$15 billion in 1975, an increase of about 30 percent over the previous year. Most of Medicare spending was for hospital care and physicians' services for the elderly and disabled. The Medicaid program, primarily for the poor and medically indigent, cost \$13 billion in 1975—up 25 percent from 1974.

In 1974, 163 million persons or 78 percent of the civilian population had private health insurance that covered hospital-care costs; 75 percent were covered for physicians' services. For other types of care, the proportions of the population insured were smaller. Only 16 percent of the civilian population had some coverage for dental care and 33 percent had coverage for nursing-home care—mostly in the form of supplements to Medicare coverage for the aged and disabled.

Most Americans bought their health insurance protection from insurance companies or through Blue Cross-Blue Shield plans. Only 6 percent of the population received health care through prepaid community plans, union plans, private group clinics, and health maintenance organizations. Depth of coverage was a problem for many of the insured; full comprehensive coverage is not commonplace. Buyers of insurance often encounter restrictions on coverage, such as exclusion from

benefits due to preexisting conditions, age-limit restrictions, benefit ceilings, substantial deductible payments, waiting periods, and non-coverage of some types of illnesses.

Because the extent of overlap or duplication in numbers of persons covered by public programs and private insurance is not known, the number of persons without economic protection against the costs of health care and illness is not easily determined. It is estimated, however, that about 38 million Americans under age 65 have no private insurance for hospital care, that 41 million have no surgical insurance, and that 22 million or 12 percent of the population have no health insurance protection under either public or private programs.

Medical Care Spending by Age

The average personal health care bill in 1975 for persons over age 65 (\$1,360) was almost four times greater than that for persons under age 65 (\$375). Almost one-half of the expenditures of the aged was for hospital care and 25 percent was for nursing-home care. Persons under age 65 spent nearly the same percentage on hospital care, but only 2 percent on nursing-home care. The younger age group spent a larger percentage on physicians' and professional services and on drugs and drug sundries.

Public funds, mainly Medicare and Medicaid, paid for over 65 percent of the personal health

Table 2. Consumer Price Index for health expenditures, June 1976

(1967 = 100)

Expenditure category	Index
Medical care	183.7
Drugs and prescriptions ...	126.0
Physicians' fees	188.3
Dentists' fees	171.6
Hospital care ¹	265.1

¹As measured by semiprivate room charges.

Source: U.S. Department of Labor, Bureau of Labor statistics.

care expenses of the aged in 1975. In contrast, persons under age 65 financed their health-care expenditures mostly with private funds, consisting of private health insurance premiums and direct payments. Public program expenditures, which represented only 29 percent of the total for this age group, were limited mostly to the poor and the disabled (table 4).

Sources: Mueller, M.S., and Gibson, R.M., National health expenditures, fiscal year 1975, *Soc. Sec. Bul.*

39(2): 3-20, Feb. 1976, U.S. Dept. Health, Education, and Welfare. Mueller, M.S., and Gibson, R.M., Age differences in health care spending, fiscal year 1975, *Soc. Sec. Bul.* 39(6): 18-31, June 1976, U.S. Dept. Health, Education, and Welfare. Mueller, M.S., and Piro, P.A., Private health insurance in 1974: A review of coverage, enrollment, and financial experience, *Soc. Sec. Bul.* 39(3): 3-20, March 1976, U.S. Dept. Health, Education, and Welfare. U.S. Department of Health, Education, and Welfare, Social Security Administration, *The Size and Shape of the Medical Care Dollar*, Chart Book/1975, Pub. No. (SSA) 76-11910. U.S. Department of Labor, Bureau of Labor Statistics, *Consumer Price Index*.

Table 4. Per capita spending for personal health care by age, type of expenditure, and source of funds, 1975

Category	Under 65		Over 65	
	<i>Dollars</i>	<i>Percent</i>	<i>Dollars</i>	<i>Percent</i>
TYPE OF EXPENDITURE				
Total	375	100	1,360	100
Hospital care		45		44
Physicians' services ..		24		16
Other professional services		12		3
Drugs and drug sundries		11		9
Nursing-home care		2		25
Other health services .		6		3
SOURCE OF FUNDS				
Total	375	100	1,360	100
Direct payments		34		29
Private health insurance		35		5
Public funds		29		66
Philanthropy and industry		2		0

Source: Mueller, M. S., and Gibson, R. M. Age differences in health care spending, fiscal year 1975. *Soc. Sec. Bul.* 39(6): 18-31, 1976. U.S. Dept. Health, Education, and Welfare.

FOOD FOR THE FAMILY—A COST-SAVING PLAN

“Food for the Family—A Cost-Saving Plan,” Home and Garden Bulletin No. 209, is a new publication from USDA. It is designed especially for families who want to follow the USDA low-cost food plan. Guides for planning and preparing well-balanced meals at low cost and information on food shopping are included. Sample menus are shown for the food manager who has little time for food

preparation, as well as for the food manager who has considerable time for and interest in cooking. Tested recipes for some foods in the sample menus are included. To obtain a free copy, send a postcard to the Office of Communication, U.S. Department of Agriculture, Washington, D.C. 20250. Request publication by name and number and include your ZIP code.

FOOD FOR THRIFTY FAMILIES

“Food for Thrifty Families,” a sample meal plan for a month following the USDA thrifty food plan, illustrates the kinds of nutritious meals families receiving food stamps and others who want to economize on food might serve. Included are menus for 31 days and lists of foods and tested recipes to provide meals for a family of four persons. Some tips on planning

and shopping for nutritious and economical meals are also given. To obtain free copies, send a postcard to Lillie Vincent, Office of Communication, U.S. Department of Agriculture, Washington, D.C. 20250. Request publication by name and include your ZIP code.

THE APPROPRIATE FAMILY FOOD PLAN

by Betty Peterkin

The food plan that a family can afford—thrifty, low cost, moderate cost, or liberal—depends largely on the family income and the number of persons in the family.¹ It also depends on many other factors such as whether some of the food used is raised at home and the importance the family puts on food in relation to other family needs. If the family spends the way many urban families of similar income and size do, it can probably afford the food plan as listed in the table on p. 21.

This table differs from similar tables

published in “Your Money’s Worth in Foods,” Home and Garden Bulletin No. 183 (revised January 1974), and in the Winter 1975 issue of *FAMILY ECONOMICS REVIEW*. The earlier tables were based on the costs for the food plans estimated for 1973 and 1974, respectively, and on data from the Bureau of Labor Statistics (BLS), Survey of Consumer Expenditures, 1960-61, updated to the same periods. This new table is based on costs for the food plans estimated for Winter 1976, and on data from the Consumer Expenditure Survey Series: Diary Data 1972 (BLS Report 448-1), updated to Winter 1976. The earlier tables showed family income after State and Federal income taxes were paid; the later table shows family income before taxes—the only type of income now available for the 1972 diary data.

¹Quantities of foods in the food plans were published in the Winter 1975 (low cost, moderate cost, and liberal) and the Winter 1976 (thrifty) issues of *Family Economics Review*; estimated costs for the plans are published in each issue (see p. 26).

Food plan that families of different sizes and incomes can usually afford, winter 1976¹

Income (before taxes)	1-person families	2-person families	3-person families	4-person families	5-person families	6-person families
\$2,500 to \$5,000	Thrifty or Low-cost	Thrifty or Low-cost	Thrifty ²	Thrifty ²	Thrifty ²	Thrifty ²
\$5,000 to \$10,000	Moderate-cost	Low-cost or Moderate-cost	Thrifty or Low-cost	Thrifty or Low-cost	Thrifty ² or Low-cost	Thrifty ²
\$10,000 to \$15,000	Liberal	Moderate-cost	Low-cost or Moderate-cost	Low-cost	Low-cost	Thrifty or Low-cost
\$15,000 to \$20,000	Liberal	Liberal	Moderate-cost	Low-cost or Moderate-cost	Low-cost	Low-cost
\$20,000 to \$30,000	Liberal	Liberal	Liberal	Moderate-cost	Moderate-cost	Low-cost or Moderate cost
\$30,000 or more	Liberal	Liberal	Liberal	Moderate-cost or Liberal	Moderate-cost or Liberal	Moderate-cost or Liberal

¹Based on costs for the food plans estimated for winter 1976, and on data from the Consumer Expenditure Survey Series: Diary Data 1972 (BLS Report 448-1), updated to winter 1976.

²Many households of this size and income are eligible for assistance through the Food Stamp Program.

Note: The plan shown in the column corresponding to the number of persons in the family and opposite the family income before taxes, costs about the amount a typical household of similar size and income spends for food. It is the plan a family of that size and income can usually afford.

ANNUAL HOUSING SURVEYS

The first Annual Housing Survey, which was conducted in October 1973, showed that there were 76 million housing units in the United States, an increase of roughly 5.8 million units over the 70.2 million (adjusted for the estimated undercount of 1.5 million housing units) in the 1970 census. Approximately 8 million new housing units were constructed during the 3½-year period between the 1970 census and the 1973 Annual Housing Survey—an annual average of 2.3 million new units. To some extent, new construction was offset by losses from the housing inventory through demolitions, disasters, and other means, such as changes to nonresidential use.

The median value of single-family owner-occupied units increased 41 percent from the median value of \$17,100 in 1970 to \$24,100 in 1973, while the median income of homeowners increased 19 percent from \$9,700 to \$11,500. Gross rents also increased significantly over the 3½-year period; the median monthly rent of \$108 in 1970 increased 23 percent to \$133 in 1973. The median income of renters increased 14 percent from \$6,300 to \$7,200 during the same period. The 1973 figures are subject to sampling variability as discussed in the report.

The 1973 Annual Housing Survey showed that 3.6 percent of the occupied housing units in the Nation lacked complete private plumbing facilities compared with 5.5 percent in 1970. Only 2.8 percent of the Nation's households experienced a breakdown in their water supply—3.3 percent had a breakdown in their flush toilet, and 1.2 percent had a breakdown in their sewage disposal system.¹

The neighborhood conditions most frequently mentioned as “being present to an objectionable extent,” were street noise and heavy traffic—by 46 percent and 29 percent, respectively. Public transportation was the neighborhood service most frequently cited as being inadequate—by 32 percent of the households. Despite these problems, 80 percent of all

households in the Nation rated their neighborhoods as good or excellent places to live.

Data from the 1973 survey were published by the Bureau of the Census in late 1975 and early 1976. Data from the 1974 survey will be available in the latter part of 1976.

Reports for the 1973 survey were issued in four parts. Each report gives data for the United States, and by region and urbanization.²

- Part A, *General Housing Characteristics*, shows data on such items as tenure, race, vacancy status, units in structure, income, and household composition. Selected counts and characteristics for new construction units and units removed from the inventory since April 1970 are also shown.
- Part B, *Indicators of Housing and Neighborhood Quality*, presents data on both the new and traditional indicators of housing quality.
- Part C, *Financial Characteristics of the Housing Inventory*, presents cross-tabulations of housing and demographic characteristics by value, rent, and income.
- Part D, *Housing Characteristics of Recent Movers*, shows data for households who moved into their present unit during the previous 12 months. These data include reason for move, household composition, and income. Cross tabulations of present unit by previous unit cover such topics as tenure, location, and units in structure.

Several supplemental reports were also issued for the 1973 survey. Reports from the 1974 survey will include parts A, B, C, and D, plus—

- Part E, *Urban and Rural Housing Characteristics for the U.S. and Regions*. (The corresponding information for 1973 was included in Parts A through D.)

¹ A breakdown refers to a complete lack of running water, or a completely unusable toilet or sewage system during the 90 days preceding the survey.

² Copies of the reports for the 1973 National Survey (Part A, 164 pp. at \$3.20; Part B, 130 pp. at \$2.75; Part C, 171 pp. at \$4.25; Part D, 146 pp. at \$2.90) may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Prices for reports from the 1974 survey had not been set at the time this issue of *Family Economics Review* went to press.

- Part F, *Financial Characteristics by Indicators of Housing and Neighborhood Quality for the U.S. and Regions*. (This information was published as a supplemental report in 1973.)

A total of approximately 60,000 housing units were enumerated in the 1973 survey. To provide more detailed and reliable information for rural areas, the sample was expanded for the 1974 survey to include an additional 16,000 units located in these areas.

These surveys are designed to provide a current and ongoing series of data on selected housing and demographic characteristics. They are conducted by the Bureau of the Census for the Department of Housing and Urban Development in response to a need for frequent and up-to-date information on the Nation's housing, which is considered a prime indicator of the Nation's economic health.

The regular annual surveys will make it possible to measure changes in the housing inventory resulting from losses and new construction and to follow trends in the number and types of housing, the level of rents and the price of housing, the frequency of mechanical and utility breakdowns, and other indicators of the physical condition of residential structures. In addition, the surveys collect data on the characteristics of respondents who moved

during the last year and on the characteristics of both their previous and current residences.

The Bureau of the Census has made major efforts to produce reliable indicators of housing quality since housing data were first collected in the 1940 census. Traditionally, Federal and local housing agencies have used condition of the structure and lack of complete private plumbing facilities to identify substandard housing. Housing analysts have recognized that the concept of inadequate or poor housing encompasses more than structural condition and plumbing facilities and that a broader concept should include measures of neighborhood quality and evaluations of basic support systems such as water and sewage disposal.

The Annual Housing Surveys present statistics that for the first time describe these broader concepts of quality. The new items include such diverse indicators as breakdowns in heating and plumbing equipment, signs of water leakage in the basement and roof, physical condition of interior ceilings and floors, and the occupants' opinions of conditions in their neighborhood and of available neighborhood services.

Source: Office of Management and Budget, *Statistical Reporters*, June 1976.

SOME NEW USDA PUBLICATIONS

(Please give your ZIP code in your return address when you order these.)

Single copies of the following are available free from the U.S. Department of Agriculture. Please address your request to the office indicated.

From Office of Communication, Washington, D.C. 20250:

- A GUIDE TO BUDGETING FOR THE FAMILY. G 108. Revised March 1976.
- RENOVATE AN OLD HOUSE? G 212. March 1976.

From Economic Research Service, Division of Information, Washington, D.C. 20250:

- POPULATION CHANGE IN NONMETROPOLITAN CITIES AND TOWNS. AER 323. February 1976.

From Farmer Cooperative Service, Information Division, Washington, D.C. 20250:

- FARMER COOPERATIVE PUBLICATIONS. FCS Information 4. Revised May 1976.

From Cooperative Extension Service, Bulletin Department, Washington State University, Pullman, Wash. 99163:

- HOME DRYING OF FRUITS AND VEGETABLES. EB 657. September 1975.

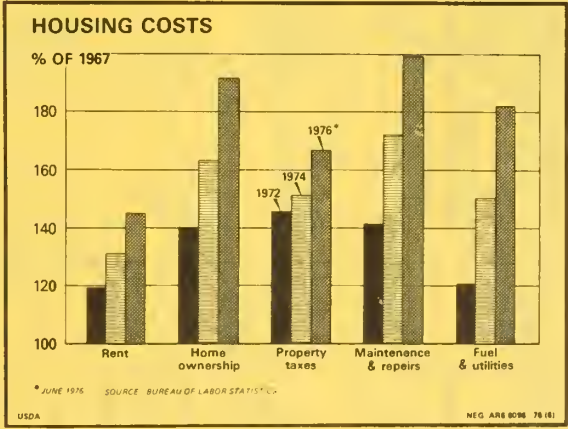
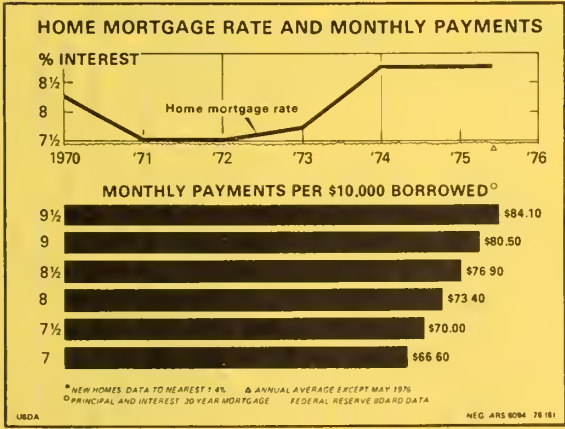
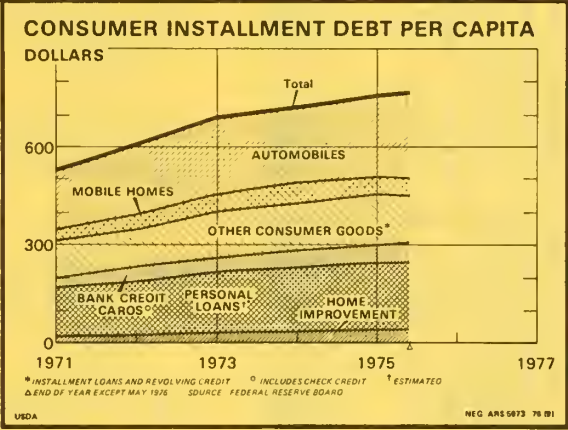
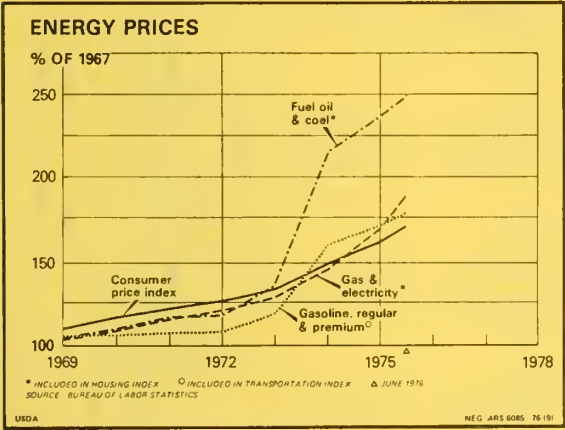
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SOME NEW USDA CHARTS¹



¹Black and white photographic prints or colored slides of charts may be ordered from Photography Division, Office of Communication, U.S. Department of Agriculture, Washington, D.C. 20250. Slides are

30 cents each and prints are \$2.70 (8" X 10" or less). When ordering, please give negative number, title of chart, and, if a print, the size desired.

COST OF FOOD AT HOME

Cost of food at home estimated for food plans at four cost levels, September 1976, U.S. average ¹

Sex-age groups	Cost for 1 week				Cost for 1 month			
	Thrifty plan	Low-cost plan	Moderate-cost plan	Liberal plan	Thrifty plan	Low-cost plan	Moderate-cost plan	Liberal plan
<i>Dollars</i>								
FAMILIES								
Family of 2: ²								
20-54 years	22.30	29.30	36.70	44.20	96.70	126.80	159.30	191.60
55 years and over	20.00	26.00	32.20	38.60	86.60	112.60	139.70	167.40
Family of 4:								
Couple, 20-54 years and children--								
1-2 and 3-5 years	31.70	41.10	51.40	61.70	137.10	178.20	222.60	267.60
6-8 and 9-11 years	38.10	49.70	62.40	75.00	165.20	215.20	270.20	324.90
INDIVIDUALS ³								
Child:								
7 months to 1 year	4.60	5.60	6.90	8.20	19.70	24.50	29.90	35.40
1-2 years	5.20	6.60	8.20	9.70	22.30	28.70	35.40	42.20
3-5 years	6.20	7.90	9.80	11.80	26.90	34.20	42.40	51.20
6-8 years	7.90	10.30	12.90	15.50	34.30	44.40	55.70	67.00
9-11 years	9.90	12.80	16.10	19.30	43.00	55.50	69.70	83.70
Male:								
12-14 years	10.60	13.60	17.10	20.50	46.00	59.10	74.10	89.00
15-19 years	11.70	15.10	18.90	22.80	50.50	65.30	81.80	98.70
20-54 years	11.20	14.70	18.60	22.40	48.40	63.70	80.50	97.20
55 years and over	9.90	12.90	16.10	19.40	42.90	56.00	69.70	84.00
Female:								
12-19 years	9.50	12.20	15.10	18.10	41.00	52.90	65.50	78.40
20-54 years	9.10	11.90	14.80	17.80	39.50	51.60	64.30	77.00
55 years and over	8.30	10.70	13.20	15.70	35.80	46.40	57.30	68.20
Pregnant	11.40	14.70	18.20	21.70	49.60	63.90	78.70	93.90
Nursing	12.20	15.60	19.40	23.20	52.70	67.80	84.30	100.50

¹Assumes that food for all meals and snacks is purchased at the store and prepared at home. Estimates for each plan were computed from quantities of foods published in the Winter 1976 (thrifty plan) and Winter 1975 (low-cost, moderate-cost, and liberal plans) issues of *Family Economics Review*. The costs of the food plans were first estimated using prices paid in 1965-66 by households from USDA's Household Food Consumption Survey with food costs at 4 selected levels. These prices are updated by use of "Estimated Retail Food Prices by Cities" released monthly by the Bureau of Labor Statistics.

²10 Percent added for family size adjustment. See footnote 3.

³The costs given are for individuals in 4-person families. For individuals in other size families, the following adjustments are suggested: 1-person--add 20 percent; 2-person--add 10 percent; 3-person--add 5 percent; 5-or-6-person--subtract 5 percent; 7-or-more-person--subtract 10 percent.

CONSUMER PRICES

Consumer price index for urban wage earners and clerical workers

(1976 = 100)

Group	Sept. 1976	Aug. 1976	July 1976	Sept. 1975
All items	172.6	171.9	171.1	163.6
Food	181.6	182.4	182.1	177.8
Food at home	179.9	181.0	180.9	178.2
Food away from home	188.7	187.8	186.9	176.5
Housing	179.5	178.4	177.5	168.9
Shelter	181.5	180.6	179.5	171.6
Rent	146.2	145.6	145.0	138.4
Homeownership	194.4	193.4	192.2	183.9
Fuel and utilities	185.1	183.7	182.5	170.9
Fuel oil and coal	250.8	249.3	248.1	238.7
Gas and electricity ..	192.2	190.3	189.6	174.0
Household furnishings and operation	170.2	169.1	168.9	160.1
Apparel and upkeep	150.2	148.1	146.5	143.5
Men's and boys'	150.1	147.5	145.6	142.8
Women's and girls'	145.0	142.2	140.2	139.9
Footwear	152.3	151.0	149.6	144.6
Transportation	169.5	168.5	167.6	155.4
Private	168.6	167.8	166.8	153.9
Public	176.9	174.6	174.4	169.5
Health and recreation	165.3	164.4	163.7	155.4
Medical care	187.9	186.8	185.5	172.2
Personal care	162.8	161.6	160.5	152.1
Reading and recreation .	152.8	151.4	151.2	146.0
Other goods and services	153.9	153.8	153.6	148.0

Source: U.S. Department of Labor, Bureau of Labor Statistics.

Index of prices paid by farmers for family living items

(1967 = 100)

Item	Sept. 1976	Aug. 1976	July 1976	Sept. 1975	Aug. 1975	July 1975
All items	178	177	177	169	169	168
Food	184	---	---	182	---	---
Clothing	---	189	---	---	174	---
Housing	180	178	178	170	169	169
Medical and health	187	186	184	171	170	168
Education, recreation, and other	154	154	153	148	147	147

Source: U.S. Department of Agriculture, Statistical Reporting Service.

FAMILY ECONOMICS REVIEW

FALL 1976

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FAMILY ECONOMICS REVIEW

HIGHLIGHTS/WINTER 1976

ANNUAL OUTLOOK ISSUE

GENERAL ECONOMIC OUTLOOK
THE OUTLOOK FOR FOOD, CLOTHING, AND HOUSING
DIETARY GUIDANCE FOR FOOD STAMP FAMILIES
CONVENIENCE FOODS

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2007

CURRENT SITUATION AND GENERAL ECONOMIC OUTLOOK FOR THE FAMILY ()

by Helen F. McHugh, Dean
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In analyzing the general economic situation of American families, it seems appropriate to mention some general population characteristics that may affect the general economic outlook in the years to come. The working population is a smaller part of the total population today than it was in 1960, and it must support increasing percentages of young and old. If per capita earnings are to be maintained, increased productivity from the working population will be required. A greater number of women than men are found in most population segments, and one in 10 families is headed by a woman. The amount of education is becoming more uniform throughout the country; the median years of school completed was 12.3 in 1974 compared with 9.3 in 1950. The numbers of people living in nonmetropolitan areas are increasing and while the population is highly mobile, moves are occurring at a decreasing rate. The South leads other regions in the rate at which new households are being formed.

Current Situation

The number of employed persons increased by 1.8 million persons between August 1974 and August 1975, yet it is noteworthy that the larger number represents only one-tenth of one percent more of the population now in the workforce. The impact of unemployment falls with uneven force on different classes of the population. Young people have borne the heaviest burden of all. While almost 13 percent of 16- to 19-year-olds were unemployed in August 1974, that percentage was nearly 18 a year later. For nonwhites in this age group the rate of unemployment was 31 percent in August 1975. Classified by occupational categories, the lowest rates of unemployment in

August 1975 were found among the manager-administrator class (2.7 percent), while the highest percentage was among construction workers (21.2 percent). The rates of unemployment among women 20 years and older are greater than for their male counterparts in all categories. The true unemployment rates may be even higher, as the data do not take into account those who have become so discouraged that they no longer are actively seeking work. The sheer trauma of repeated disappointments makes this understandable.

Unemployment insurance has reduced the magnitude of income disruptions for many workers, but such insurance is far from universal or fully offsets lost earnings. In 1974, about 55 percent of those unemployed did not receive insured benefits. In 1975, both the number of unemployed and the number of insured increased markedly, and while the number of unemployed not receiving benefits was higher in 1975 than in 1974 (by 100,000 people), the percentage of the unemployed not covered by benefits dropped to 36 percent. In 1975 there was a substantial increase in the number of initial claimants simultaneous with a doubling of the number who had exhausted their benefits. The average weekly benefits during the last 12 months of record ranged from \$62.50 to \$69.00, while the average weekly earnings for those employed ranged from \$157 to \$165.

Industrial production of all sorts dropped sharply in the final quarter of 1974. The decline continued for the most part through the second quarter of 1975. Preliminary data have been released for subsequent months which indicate a reversal back to an upward trend; yet, leading indicators announced in late October 1975 show that September 1975 activity was off in several areas. The statistical practice is that similar directional movement for 3 months in succession is necessary before it can be labeled a trend. Simultaneous with the downtrend in production was the decline in sales activity coupled with a working off of inventories in both the retail and wholesale

¹Tables on population characteristics and family expenditures were contained in this Outlook paper but are eliminated here because of space. These tables may be obtained from the Consumer and Food Economics Institute, Agricultural Research Service. See the address on page 2.

sectors. The unavoidable impact of such directional shifts in two major areas of activity was the reduction in employment. Data available at this time a year ago showed little, if any, of these directional shifts. Numerical data and graphs through the second quarter of 1974 showed business and industrial activities continuing to increase or at least holding constant. About the only signal of an impending downturn was the mood of the people.

Per capita disposable income for the second quarter of 1975 was \$5,055, up \$490 from the preceding year. In 1958 dollars, the equivalents would be \$2,907 and \$2,850, respectively, meaning that if all the personal income were evenly distributed among the population of the United States, each person would have had \$57 more real purchasing power this year than last in 1958 terms.

Using 1967 (the base point of the Consumer Price Index) as a base, the average wage earner in the United States received in July 1975 the equivalent of \$115.74 (1967 dollars) weekly, whereas his earnings a year earlier would have measured \$119.16 (1967 dollars)—a slight drop in the wage earner's purchasing power.

Incomes, however, are not evenly spread. Median family incomes in the South in 1973 were approximately \$1,400 below the national figure, while in the other regions the medians were up to \$800 above. Nonwhite families experienced still greater variances, with the median for that group \$7,596 in 1973, almost \$4,500 below the figure for the United States as a whole. Another important consideration is the number of families whose income is substandard. Using \$6,000 as the breakpoint and making no allowance for family size, nearly one-fifth (19.2 percent) of the families in the United States would have been classed as substandard incomewise in 1973. Almost 25 percent of the families in the South have incomes of \$6,000 or less, while only 17 percent of the families in the Northeast had such limited resources. Almost 42 percent of Negro families have incomes in the \$6,000 or less category, and the percentage increases to 52 percent for Negro families living outside metropolitan areas.

Despite the high levels of unemployment and the irregular earnings in some occupations, the levels of personal consumption have risen.

Personal consumption expenditures by the end of the second quarter of this year were at an annual rate \$70 billion higher than a year earlier. This increased rate was almost equally divided between the purchase of nondurables and services. The dollar purchases for durables remained, in essence, unchanged.

The recently released report of the 1973 survey of Farm-Operator Family Living Expenditures provides more specialized information for rural families. Data from that study reflect the changing allocations among expenditure categories. One of the more notable changes was an almost 50 percent reduction in the percentage spent for clothing (from 13.0 to 7.0 percent between 1955 and 1973). A percentage increase of similar magnitude for transportation shifted that expenditure category to the third largest for the average farm family. While the higher prices for vehicles would explain part of the percentage increase for transportation, some may be attributable to upgrading types of vehicles or through the addition of more vehicles per family. The higher allocations for maintenance and operating costs were recorded before any impact from the 1973 oil embargo. The amount of travel may have changed from the previous survey period (1955).

Data on spending for food by farm families in the 1973 survey are consistent with Engel's Law that families with higher incomes spend more dollars for food but a smaller percent than the lower income families. Food was the only *major* expenditure category where expenditures varied much among the farm classes.

Shelter was a relatively constant share among the income classes, with the least variation in dollar amounts spent by families for household operations. Relatively small numbers of families had purchased major appliances during the survey period.

Expenditures for clothing are puzzling from the standpoint of the dollar allocations among the different age groups. The modest dollar outlays for the younger family members may reflect the ability of the household members to adapt items for younger members of the families. Another related element may be the source of over 50 percent of the family's income. Since so much is earned off the farm,

clothing expenditures for older family members may relate directly to the generation of that income. Another factor may be that because of the rapid growth among children below 16 years lower priced garments are purchased. That seems to me the weakest explanation since no readymade garments are inexpensive nowadays.

In comparing the expenditures for all farms between the two survey periods, outlays for medical care declined about 0.6 percent, while the costs for personal insurance increased by a bit more. Is it possible that personal insurance now covers a greater share of the medical costs so that, in essence, only a shift among categories has occurred? The percentage outlays for the different farm classes suggest this even more strongly in that the relationship between the two categories appears to be inverse.

Expenditures for education appear to have a positive correlation with income levels. The nature of the increased expenditure may reflect differences in the sources of education.

General Economic Outlook

You have heard about all that can be said about what *is*; now comes the tough part of trying to suggest what *may be*.

Unemployment poses as a persistent problem that may have only gradual improvement. Large numbers of those without jobs at this time last year are still unemployed. For many, the condition of unemployment appears to feed upon itself and to almost defy remedy. This state of affairs is particularly grim for that group of young people who have been unable to obtain any work experience. When recovery begins and jobs become available, the well-known tendency of the employer is to choose those with experience. The emotional impact for some may be more difficult to handle than the monetary. It is possible that "retraining" may have to occur for some before they have ever utilized their previous skills. It must be recognized, too, that new jobs will not necessarily become available where the potential workers are located. This can add both expense and trauma and sometimes the costs are seen as greater than the benefit of being employed. The magnitude of the unemployment benefits in a few instances defer job acceptance. Many jobs vacated in the last several months have

disappeared and will not be revived. As job prospects brighten, some who currently are not searching will again become a part of the statistics.

One of the biggest culprits to a resurgence of business activity at the moment is uncertainty: What are the oil producers going to charge? How efficient and safe will the new cars be? How long will the search for new energy resources be top priority? Will Government truly institute efficiencies? All these questions come to bear directly or indirectly on prices, and the fear of refueling inflation weighs heavily in many decisions that affect the number of jobs. It appears that businessmen at last recognize that some goods and services may be price-elastic. Consumer confidence appears to be on the way back but, at the moment, is not sufficiently visible to those making the decisions about cranking up the machinery of production. Some administration proposals for fiscal restraint would likely protract the unemployment problem.

Income changes during the past 12 months were relatively modest. While average earnings improved slightly overall, for some it was a time of regression. States heavily dependent upon agriculture fared less well. The high levels of unemployment moderated the demands of several unions in contract negotiations. It is doubtful that the same degree of temperance will prevail for another round of negotiations.

Signs are that 1976 and beyond will see increased earning levels on the average. Important to this prediction is the fact that some 66 million income recipients (not all employed) receive automatic adjustments in income with increases in the cost of living. The pervasiveness of such adjustments has implications for future income levels that are not clear to me. Such an approach to income changes (costs of production when interpreted from another vantage point) is an added force in the cost-price spiral. Current prices, at least in some instances, neither reflect the representative costs of production nor the worth of the goods to the potential consumer. Furthermore, many items included in the so-called cost-of-living index can hardly be considered essential to one's survival. The arguments for adjusting salaries and wages according to changes in some partly related apparatus are no more logical than a faculty member or executive asking for

a salary adjustment because he wants to send his children to a private school. Yet, this approach already is deeply engrained in our economy. The point of this digression is that income changes cannot be totally separated from the price structure.

Many questions have been asked in recent weeks about the probable magnitude of price changes in the offing. Unfortunately, very few answers have been forthcoming. A most important element to future price changes is, of course, the price of oil. So many of our products are petroleum-based that changes in the price of gasoline at the pump is almost insignificant except that such changes reflect the magnitude of accompanying changes that will occur in other segments of the economy. In short, an increase in the price of crude oil will have a manifold effect on the overall commodity price level.

Any number of stories could be related about families who greatly reduced their fuel consumption only to have the total fuel costs increase. A contributor to the drastic change in utility prices is the automatic fuel adjustment which allows utility companies to pass on to the consumer the increased cost for fuels to furnish the power. The hazard of this automatic arrangement is the removal of any incentive for the producer to negotiate for cost savings in this major factor of production category. Since negotiations require time which has its own costs, the utility company finds it easier to pass the buck on. This reflects the absence of competitive forces with the usual result of higher consumer prices.

Food and fuel prices will hold the key for consumers. Much has been written about the increasing prices for food; yet, one seldom sees mention of the fact that only a small, small portion of the increase represents increases in the prices paid to farmers for the raw commodities (only \$1 out of \$104 increase in the average 1974 food bill went to the farmer). Decisions about the control of prices of both natural gas and domestic oil will influence the magnitude of price changes for a broad range of products in addition to gasoline and heating fuels. If prices are decontrolled, double digit inflation is assured. The most recent available data show an 0.5 point decline in the wholesale price index for farm products, while processed

foods and feeds increased nearly two index points. The largest increase in any category comprising the index was for fuels and related products which advanced almost 6 points (about 2 percent).

Earlier discussions referred to regional issues, and one of growing concern is the fact that the South which has the lowest average income is now confronted with the highest index of prices. The economic challenger for individuals and families in that region will be especially acute. However, no region will find it easy to keep income and expenditures in balance.

Perhaps the most positive indicator found among all the statistics reviewed is that the level of saving as a percentage of disposable income increased to 10.5 by the end of the second quarter of 1975 from 7.4 percent just 12 months earlier.

The attitudes of consumers can affect the level of economic activity. In September 1975, the NEW YORK TIMES undertook a survey of how consumers see their current situation and what they expect for the future. In the main, attitudes expressed remained positive but more modest than previously. The highest level of optimism was among young nonwhites, especially those well educated. Young women and professionals generally see the future as still better than the present. The older people, especially those who have had irregular work experience, drew negative conclusions about the future. While the American dream seems a bit tarnished for some, it remains bright for others. Other reports of increasing confidence have appeared from time to time. No doubt, some positive value can result from this optimism.

Sources: Council of Economic Advisers, *Economic Indicators*, 1975. *The New York Times*, October 30 and 31, 1975 (two-part series). U.S. Department of Agriculture, Consumer and Food Economics Institute, *Family Economics Review*, Summer 1975. U.S. Department of Agriculture, Economic Research Service, *Social and Economic Characteristics of the Population in Metro and Nonmetro Counties*, 1970, AER No. 272, 1975; *The Revival of the Population Growth in Nonmetropolitan America*, ERS 605, 1975. U.S. Department of Agriculture, Statistical Reporting Service, *Farm-Operator Family Living Expenditures for 1973*, 1975. U.S. Department of Commerce, Bureau of

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Health, Education, and Welfare, *Social Security Bulletin*, October 1975. United States Senate Committee on Agriculture and Forestry, *The Economic and Social Condition of Nonmetropolitan America in the 1970's*, 94th Congress, First Session, 1975.

POPULATION GROWTH IN NONMETROPOLITAN AREAS

The population grew faster in nonmetropolitan areas than in metropolitan areas between April 1970 and July 1973, reversing a long-term population trend of rural to urban migration. During this 3-year period, population in nonmetropolitan areas grew 4.2 percent compared with 2.9 percent in metropolitan areas. Among the reasons for population growth in rural areas and small towns are decentralization of manufacturing and other industry; increased settlement of retired people; expansion of State colleges; more recreation activity; and a higher birthrate in nonmetropolitan areas. Also, urban areas have lost their appeal for many people.

The highest population growth rates in nonmetropolitan areas were for counties adjacent to metropolitan areas (4.7 percent), although the population in counties not adjacent to metropolitan areas grew at a rate of 3.7 percent, still well above the metropolitan growth rate of 2.9 percent. Counties in nonmetropolitan areas that included a city of over 25,000 people had a higher growth rate than completely rural counties (4.2 and 3.0 percent, respectively).

Increased retention of population in nonmetropolitan areas is characteristic of almost every part of the United States. Although there were still nearly 600 nonmetropolitan counties declining in population in the 1970-73 period, this was less than half as many (1,300) as declined in the 1960's.

The decentralization of manufacturing has been an important factor in transforming the rural and small town economy, especially in the South. During the 1960's about half of the job growth in nonmetropolitan areas was in manufacturing. Since 1969, however, jobs in trade and nongoods production have grown faster than those in manufacturing.

Another important factor in nonmetropolitan development has been the growth of recreation and retirement activities, often occurring together in the same localities. The most rapidly growing class of nonmetropolitan counties in the 1970's are those in which there was a net immigration of 15 percent or more from 1960 to 1970 of white residents who were 60 and over in 1970. Although a number of these counties are in Florida and the Southwestern belts, the spread of retirement settlements to other regions (upper Great Lakes, the Ozarks, Central Texas, the Sierra Nevada foothills, and the east Texas coastal plain) is characteristic of recent years. Many of these areas have also attracted younger families because of the climate or employment opportunities.

The expansion of State colleges and universities in nonmetropolitan areas has also contributed to the growth of the nonmetropolitan population by increasing the availability and quality of higher education in those areas and making the towns with schools more attractive for development.

The declining birthrate has influenced the reversal in the population trend. The birthrate has declined since 1970 primarily in the most metropolitan parts of the country. Births in the heavily populated Northeast, North Central, and Pacific States decreased by 5.2 percent, while births in the South and Mountain West, areas with twice as many nonmetropolitan residents, increased by 3.5 percent.

Source: Beale, C.L. *The Revival of Population Growth in Nonmetropolitan America*. Economic Development Division, Economic Research Service, USDA. ERS-605, June 1975.

THE OUTLOOK FOR FOOD SUPPLIES AND PRICES //

by Kenneth R. Farrell
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In no period in recent history has the U.S. food industry undergone such economic stress as in the period 1972-75. Caught in the confluence of erratic domestic and foreign production, rising consumer demand, the energy crisis, and pervasive inflationary pressures throughout the world, food prices, marketing costs, and consumer expenditures soared at rates which most of us would have thought inconceivable just a few years ago. In September 1975 the Consumer Price Index for all food stood at 177.8—an increase of 42 percent in 3 years. In 1972 the farm food marketing bill totaled \$75 billion. We expect the bill to approximate \$100 billion in 1975, an increase of one-third. In 1972 consumers spent about \$123 billion for food. We expect them to spend about \$181 billion in 1975, an increase of 47 percent in 3 years.

For all of 1975, food prices will average close to 9 percent above 1974. This compares with annual rates of increases of about 14½ percent in each of the preceding 2 years. Among major food groups, cereal and bakery products will average about 12 percent above 1974. Meat and poultry prices will average 8 percent, dairy products and fruits and vegetables, about 4 percent, and sugar and sweets, about one-fourth above their respective 1974 averages.

Higher farm prices, likely for meat animals, poultry and eggs, and dairy products, likely will account for about one-half of the 1975 food price rise. Wider marketing spreads, primarily associated with crop-related foods, will account for the other half.

Farm-retail spreads reached record levels in the first quarter of 1975. For the year as a whole we expect the spread on our food market basket to widen about 8 percent, compared with 20 percent in 1974. During the past 2 years, large increases have occurred in costs of packaging, transportation, energy, labor, and most other inputs used by food marketing firms. However, price increases for some inputs have slowed in 1975 as inflationary forces in the economy eased.

Prices of intermediate goods and services purchased by food marketing firms rose about 5 percent from the fourth quarter of 1974 to the second quarter of 1975, compared with almost 11 percent for the same period a year earlier. Prices of packaging materials, which account for one-eighth of total marketing costs, held almost steady following the substantial boost last year. Energy costs continued to go up, but the rate slowed markedly. Interest rates on short-term loans declined during the first half of the year and currently are substantially lower than a year ago, thus lowering the cost of financing inventories and other capital outlays.

The largest expense of food marketing firms is direct labor costs. Increases in hourly earnings of food processing, wholesaling, and retailing employees the past year have been about 9 percent, compared with an average annual rate of a little over 6 percent since 1970. The rate of increase in hourly earnings slowed slightly in the first half of this year compared with a year earlier, but rising labor costs continued to exert upward pressure on farm-retail spreads.

Personal consumption expenditures for food likely will total around \$181 billion in 1975, up about one-tenth from last year reflecting mostly price increases and population growth. This compares with increases of 14.6 percent in 1974, 16.4 percent in 1973, and annual increases of 2 to 8 percent in the late sixties and early seventies.

Away-from-home expenditures are increasing more rapidly than those for food-at-home—a reversal from the situation of the last 2 years and a return to the typical pattern of the decade ending in 1972. Away-from-home expenditures will account for about 21 percent of total food expenditures, only marginally different from the situation of the last 8 years.

USDA expenditures for domestic food programs now represent 4 percent of personal consumption expenditures for food. In the 1974-75 recession, they demonstrated how they help to maintain demand for food.

Prospects for 1976

With harvesting of the very large 1975 crop essentially complete, the outlook for food supplies and prices through mid-1976 will be heavily influenced by the manner in which these crops are utilized and their offset on livestock production. Of particular importance is the extent to which livestock and poultry producers decide to increase output utilizing this year's larger feed crops. These decisions, in turn, will depend partly on the level of foreign demand for U.S. grain and soybeans. With record crops now assured, total supplies of these commodities are sufficiently large to permit both increased livestock feeding and an expanded level of exports, including reported and anticipated sales to the Soviet Union. However, the uncertainty surrounding the relative growth in these two outlets must be recognized.

Under the conditions which now seem most likely, food prices are expected to rise at an annual rate of 4 to 5 percent during the first half of 1976, or an average rate of a little over 1 percent per quarter. First quarter prices may rise at a slightly faster pace as output of meat and poultry declines in the face of strengthening domestic demand and increasing processing and marketing costs. However, the rate of increase is likely to slow from the first to the second quarters as output of fed beef, pork, and poultry expands. Seasonal price increases for fruits and vegetables, as well as higher marketing and transportation costs, likely will account for most of the small average price advance expected for the second quarter.

Marketing spreads, which have increased in all but 2 of the past 20 years, can be expected to continue to advance in the first half of 1976, but probably at a slower pace than in 1975 and certainly slower than in 1974. The rate of increase may slow to around 5 percent from year-earlier levels. This compares with year-to-year rise of about 11 percent for the first half of 1975.

Despite general economic recovery anticipated in the first half of 1976, several major inflationary pressures may impact on the cost of marketing food. The marketing bill for U.S. farm foods may average 6 percent higher in

1976 than in 1975. Major contributors to this rise will be increased costs of:

- Labor—up 6 to 8 percent.
- Packaging materials—up about 5 percent.
- Other costs—up about 7 percent due chiefly to energy and transportation.

Productivity should improve slightly due to greater volumes of food marketed and help restrain increases in these cost elements.

About one-fifth of the workers in the food marketing industry are covered by major collective bargaining agreements. Between now and June 1976, agreements covering about a quarter million of these workers will expire. Renegotiated agreements, prior wage settlement terms, and cost-of-living adjustments will continue strong upward wage trends in the food industry. Settlement terms of collective bargaining agreements have a far-reaching effect on the wage structure of the entire sector. Wages of nonunion and management employees generally follow changes in collective bargaining agreements.

Some Longer-Run Issues

Finally, I want to back off from the events of 1975 and those foretold for 1976 and look at some current and evolving characteristics of the food industry that may affect its performance in the years ahead. I will touch only on a few highlights. Many others also deserve consideration.

The year 1975 demonstrates that double-digit inflation in food prices has not become inevitable and 1976 offers the hope of an even lower rate of food price inflation than in 1975. The events of the last few years emphasize what we have tended to forget—that a major source of price instability is natural disaster—droughts, floods, too much rain, early frosts, and insects and diseases. This emphasizes one of the major characteristics of the next decade—instability—much of it tied to weather both here and abroad.

A second characteristic obvious from the events of the past 3 years and much of the preceding discussion at this Outlook Conference is the close ties of the entire world in food supplies and prices. The Commodity Credit

Corporation stocks and similar stocks in Canada and Australia of the fifties and sixties, which provided the cushion between events abroad and domestic food prices, have gone and appear unlikely to reappear as a continuous feature. The emergence of the USSR as a participant in the world market means that the tremendous instabilities of grain production in that part of the world have become a part of our uncertainties.

A significant element in instability is inflationary psychology as applied to commodity prices. With the kind of commodity markets we have around the world, there is a very strong tendency for rapid price increases, which are initiated by natural disaster, or actions, such as the oil embargo, to be translated into a much greater runup of prices than any economist can find a basis for in the underlying supply and demand relationships. Whether it is possible to change markets in a way that will reduce the effects of such actions is another question.

Instability cannot be abolished by decree. It will be with us for some time, perhaps permanently, although hopefully not in the degree observed in 1973 and 1974. A marketing system that must cope with instability is very different from one that must deal only with small changes, most of which are relatively predictable. It is a more expensive system, since it must provide the means of adjustment to instabilities arising from many sources.

What of the long-run trends underlying this instability? The consensus of prominent agricultural economists seems to be that the long-run supply price of agricultural products is moving upward and this is to be expected to continue. This view was undoubtedly heavily conditioned by the flattening out of the productivity curve for agricultural production from the mid-sixties to the late sixties. The more recent increases in productivity would tend to modify this view if they are continued. Other important elements in this conclusion are the energy-intensive nature of agricultural production and the expectation of fairly steady rises in energy costs in the foreseeable future. Another principal element is the virtual completion of the off-farm migration and the disappearance of the large labor reserves in the countryside which could lead to more rapid increases in farm wage rates.

Once food products leave the farm, the elements of instability are less and largely man-made. The long-term story of marketing spreads is that they increase at almost the same rate as consumer prices in the rest of the economy. The view of the operators of several large-scale econometric models seems to be for about 5 to 6 percent annual increases in the Consumer Price Index for goods and services other than food—barring another oil embargo or similar shocks over the next 5 to 10 years.

Further changes are in prospect in food processing and retailing. The supermarket building boom ended in the early sixties. Marketing strategy shifted to trading stamps and other merchandising devices which added to costs. A boom in convenience stores began which has now run its course. The next few years will see a continued movement into larger stores—a number of these will be “hypermarkets,” which combine a grocery supermarket with a department store. This addition of more non-food items will provide much of the growth which supermarket firms are looking for without putting as much pressure for expansion on the food end of the business. To what extent this will moderate the pressure for price competition remains to be seen.

Productivity is the offsetting factor to higher input prices. Unfortunately, we have not had much in the way of productivity to offset the staggering increases in the input prices for fuel, packaging, interest and labor, and other intermediate products. Consequently, unit costs have risen rapidly maintaining the upward pressure on retail prices even as we see farm prices decline for some commodities. Retail store capacity has expanded faster than volume. Consequently, overhead expenses for depreciation, rent, and so forth are raising unit costs as a result of excess capacity.

These are but a few of the changing characteristics of our food marketing system. Others might be cited concerning structure, economic concentration, and the myriad of local, State, and Federal Government regulations which overlay the system. We understand only very poorly the impacts of the changing characteristics upon performance of the food industry. Certainly such issues deserve high priority on the agricultural economic research and extension agendas of the immediate future.

CLOTHING AND TEXTILES: SUPPLIES, PRICES, AND OUTLOOK FOR 1976

by Virginia Britton
Agricultural Research Service

Clothing Expenditures and Prices

Annual spending by consumers for clothing and shoes is estimated to be about \$369 per person in 1975, according to preliminary figures for the first three quarters of the year (see table). Although this amount is \$19 higher than in 1974, about three-fifths of the increase is accounted for by higher prices rather than by increased buying.

The price level for apparel and upkeep as measured by the Consumer Price Index (CPI) averaged 5.2 percent higher during the first 9 months of 1975 than in the same period in 1974. Among the three apparel subgroups, men's and boys' clothing averaged 5.2 percent higher than in 1974; footwear, 5.1 percent higher; and women's and girls' clothing, 2.8 percent higher.

Trade reports indicate that retailers and manufacturers of clothing and textiles recognize the effect on their sales of higher costs to families of the basic necessities, chiefly food

and fuel, in the past 2 years.¹ For example, from September 1973 to September 1975, while apparel and upkeep price levels increased 12 percent, consumers had to adapt their budgets to price increases such as 19 percent for food at home, 25 percent for medical care, 50 percent for gasoline and motor oil, 38 percent for gas and electricity, and 79 percent for fuel oil and coal, as shown by the CPI. While these price increases affect all consumers, especially those with restricted or inflexible income, they affect some more than others: Large families are particularly hurt by increases in food prices, older persons by increases in medical

¹ Discussion of business trends is based on review and assessment over several months of news items in trade sources such as the *Daily News Record*, *Textile Organon*, *America's Textiles*, *American Fabrics and Fashions*, *Chemical and Engineering News*, and the *Wall Street Journal*, as well as trade reports in the *New York Times* and *Business Week* and other publications of general circulation.

Annual expenditures on clothing and shoes

Years	Per capita expenditures		Percent of expenditures for personal consumption		Aggregate expenditures	
	1958 dollars	Current dollars	1958 dollars	Current dollars	Billions of 1958 dollars	Billions of current dollars
1966	185	204	8.7	8.6	36.4	40.3
1967	184	213	8.5	8.6	36.6	42.3
1968	188	231	8.3	8.6	37.8	46.3
1969	191	248	8.3	8.7	38.8	50.2
1970	191	258	8.2	8.6	39.1	52.8
1971	197	277	8.2	8.6	40.8	57.3
1972	209	302	8.3	8.6	43.6	63.0
1973	220	334	8.4	8.7	46.3	70.2
1974	212	350	8.3	8.5	45.0	74.1
1975 ¹	217	369	8.6	8.4	46.3	78.8

¹ Preliminary figures--average of estimates for first 3 quarters of 1975 (that is, seasonally adjusted quarterly totals at annual rates).

Source: Department of Commerce.

care prices, rural families by increases in gasoline and motor oil for transportation, and families in colder climates by increases in prices for heating fuel.

Trade papers summarize the retailer's current goal as to trim costs and raise profits rather than simply build sales. To this end, particular emphasis is given to inventory control and rapid turnover. Inventories have been worked down by special sales and clearance sales and are said to be lower and more balanced than a year ago. Retailers are striving to hold down inventories by buying closer to the season and re-ordering more often. Retailers seek "sure-sellers" or "hot movers," but fewer big ticket, low-turnover goods or fringe items, which may mean a smaller variety than in the past and fewer clearance markdowns. They want fashion and promotion goods with fresh inventories and fast turnover, even reducing quickly the prices of fashion goods. There is stepped-up merchandising of men's wear that emphasizes fashion, multiple seasons (at least four a year), and more flexibility in color, style, and fabric.

Chain retailers reported good fall 1975 sales in children's apparel and shoes but continued strong price resistance except in items such as prewashed denims, corduroy sportswear, and men's leisure suits. For next spring and summer, featured items are expected to include separates and coordinates; color-coordinated goods in a range of weights; women's scarves, stoles, shawls, and other items that can be coordinated; and men's print sport shirts and casual pants. Leisure suits will vary from casual to moderately tailored, and sportswear-oriented clothing is expected to be important even for tailored clothing.

Retailers purchased about 9 percent fewer shoes (nonrubber) in the first 7 months of 1975 than a year earlier, according to estimates from the U.S. Department of Commerce. Purchases from U.S. producers declined, while imports remained about the same. In August the U.S. nonrubber shoe industry claimed that imports caused it "serious injury" and asked the International Trade Commission to put mandatory quotas on footwear from some foreign countries. In the first 7 months of 1975, retailers purchased about 56 percent of their shoes from U.S. producers—27 percent with uppers of leather (all or part), 17 percent

with vinyl, and 12 percent with other materials (such as fabric and straw). About 44 percent of retailers' purchases were imported, including 21 percent with leather uppers, 16 percent with vinyl, and 7 percent with other materials. In total, about one-half the shoes had non-leather uppers, compared with about one-third in 1970; and most shoes had nonleather soles.

During 1976, price levels for apparel will probably continue to rise as the economy revives and as increased costs are passed along. However, continued pressures on consumer income, limiting amounts for discretionary spending, may prevent any large rise in average spending on clothing in terms of dollars of constant value.

Supplies of Raw Materials²

Prospective supplies of raw materials appear adequate for the year ahead, and production capacity is available unless hampered by a development of shortages of natural gas this winter. Since August, however, industrial users of natural gas have been permitted by the Federal Power Commission to search out their own supplies.

U.S. mill use of *fibers* in calendar year 1975 will drop below 50 pounds on a per capita basis. This compares with 1974 use of 52 pounds, including about 16 pounds of cotton, 36 pounds of manmade fibers, and less than 1 pound of wool. Before the recent recession, fiber use hit a record of nearly 60 pounds per capita in 1972.

Although U.S. mills are using less cotton this year, mill use has been increasing since the low point reached early in 1975. With general economic activity improving in 1976, mill use of fibers will probably increase from the 1975 level. With the sharply smaller *cotton* crop expected for 1975, smaller U.S. cotton supplies are expected for the current crop year, August 1, 1975, to July 31, 1976, despite much larger cotton stocks at the beginning. However, somewhat smaller exports during the current crop year will mean adequate supplies for domestic mills. Prices for most qualities of

²Except where specifically noted, estimates of supplies were provided by the Economic Research Service of the U.S. Department of Agriculture.

cotton have risen from the January 1975 bottom, primarily reflecting reduced 1975 crop prospects, improving demand, and producer resistance to selling at the previous low prices. Although current prices are a little above prices for competitive rayon and polyester staple, increasing manmade fiber production cost may soon narrow the gap.

Shipments of *manmade fibers* by U.S. producers have generally been rising in 1975. Figures for August were approximately 9 percent higher than for July, according to TEXTILE ORGANON (September 1975). However, total shipments during the first 8 months of 1975 were about 19 percent lower than in the same period in 1974. Trade papers report that several major producers of polyester filament yarns plan a new round of price increases effective with November 1975 shipments. Price increases were also scheduled for rayon staple and for triacetate filament yarns. Some fiber producers talk of prices equal to or higher than the 1973-74 highs because of increasing costs of raw material and production and of meeting requirements under new environmental regulations.

U.S. *wool* production (apparel class) for 1975 is estimated at 10 percent below 1974 and 18 percent below 1973, and the outlook for 1976 is for continued decline. U.S. farm

prices of shorn wool in 1975 are running well below prices in the previous 2 years. There are, however, very large foreign stocks of raw wool available, though foreign prices are higher than U.S. prices. U.S. mill use of raw apparel wool in 1975 has been running ahead of 1974. Further increase in wool use by U.S. mills will depend largely on the level of economic recovery and the competition of manmade fibers.

U.S. production of cattle *hides* in 1975 was about 10 percent higher than in 1974, according to preliminary estimates. The projection for 1976 is for a further 3 percent increase. In 1975 these hides may have been smaller than in the past because of lower slaughter weights of range animals than of those finished in feedlots. Slaughter weights are expected to be increasing again in 1976 as fed cattle slaughter increases. An increase in the supply of leather on the market may result from the development of techniques for skinning hogs presently used by some packers and being considered by others. New techniques for tanning pigskins to eliminate grease should result in greater use of this material for leather. Growing fashion for leather with the individual scratches and markings of the original hide and for leathers and suedes of varied colors for garments is seen by the Tanners' Council.

WARDROBE REPLACEMENT PLANNING AID FOR FAMILIES

A new computer program "Wardrobe Replacement Planning Aid for Families" has been developed by the Consumer and Food Economics Institute. The computer program is available to Extension workers and others who work with families to help them schedule clothing purchases to meet wardrobe needs at a given budget level. The aid is to be used with families on low or moderate budgets.

The program takes into consideration the specific characteristics of the family members and the amount available to spend for clothing and constructs, for each family member, a plan for replacing garments in the wardrobe. The plan shows the garments to be replaced each spring and fall for 4 years, the approximate price that may be paid, and the number of years each garment is expected to last before

replacement. A clothing inventory for each 6-month period shows the number of garments that will be available for use.

The user of the program analyzes the wardrobe plan against the needs of each family member to determine adequacy and makes adjustments that are necessary to provide a satisfactory plan.

The program is available in interactive mode on the Computerized Management Network (CMN). Information about costs and procedures may be obtained from the Computerized Management Network, Cooperative Extension Service, Virginia Polytechnic Institute and State University, Blacksburg, Va. 24061.

Information on obtaining a program deck to use on your own system in interactive or batch mode may be obtained from Mary Lou Cooper,

Consumer and Food Economics Institute (CFEI), Agricultural Research Service, U.S. Department of Agriculture, Hyattsville, Md. 20782.

The computer programs "Budgeting for Retirement" and "Can We Afford It?" are still

available in interactive mode on the Computerized Management Network under the program names "RETIR" and "AFFRD," respectively. Both programs are also available in batch mode. The program decks and instructions for entering the data are available from CFEI.

SITUATION IN HOUSING AND TRENDS AFFECTING THE FAMILY

by Robert J. Sheehan

National Association of Home Builders

Private housing starts for the year 1975 are expected to total only 1.15 million units. The 1975 production level will be the lowest since 1946, and it will be 52 percent below the record production year 1972 when 2.4 million units were started. In spite of this very low level, a modest recovery has already begun. Private housing starts have moved from an 880,000 unit seasonally adjusted annual rate in December 1974 to a 1.25 million unit in the third quarter of 1975. National Association of Home Builders' (NAHB) 1976 forecast shows a continuation of this moderate recovery, with starts expected to total 1.45 million units.

Why was the housing downturn so sharp and the recovery so modest? The exceptionally strong housing production years 1971, 1972, and 1973 were supported with a very high level of Federally subsidized units. Total starts reached over 2.0 million units during each of these years, and more than 500,000 starts were subsidized in the 3-year period. U.S. Department of Housing and Urban Development's (HUD) Section 235 and Section 236 programs for low- and moderate-income families provided a major share of these subsidized starts. This high level of subsidies resulted from housing legislation passed in the late 1960's, when a housing goal was established, specifying 26 million units over a 10-year period. But in late 1973, the Administration withdrew its support from the Sections 235 and 236 programs.

The Federal Government's withdrawal of support to the housing industry was coupled with an economic downturn and rising inflation through 1974. Interest rates increased, and savings left thrift institutions for higher yielding government securities. In 1974, private

housing starts dropped to 1.34 million units from 2.05 million units in 1973. By the end of 1974, families experienced a significant drop in personal income in real terms, the threat of unemployment loomed, and high mortgage interest rates were connected with the purchase of a new home. The costs of other housing expenses, transportation, and food also were increasing rapidly. The energy crisis and the jump in oil prices now rested on consumers, who were faced with much higher utility and gasoline bills. These factors forced major shifts in family budgets.

In early 1975, the economy began to turn around. Savings began to flow back into thrift institutions at record rates. During 1974, Administration programs were funded, and new legislation was developed, passed, and funded by Congress—thus, providing some support to new homes sales.

Administration programs included \$10 billion through the Government National Mortgage Association (Ginnie Mae) Tandem Plan, and a \$3 billion special assistance program through the Federal Home Loan Mortgage Corporation (Freddie Mac). The Tandem Plan provides below market interest rates for mortgages insured under FHA and VA homeownership programs. The Federal Home Loan Bank was permitted to extend \$4 billion in special advances to member savings and loan associations. The new legislation was a conventional mortgage support program, known as the Brooke-Cranston Bill. It provided \$7.5 billion in funding. The total potential of these programs was support for over 650,000 single family sales units. By the end of second quarter 1975, about 175,000 new units had been

assisted. Many problems exist with some of these programs, which probably will never reach full potential. However, they may have prevented a total collapse of the new home sales market.

The 1975 sales market also received a big boost from new legislation that allowed a tax credit of up to \$2,000 for the purchase of new units which were in the inventory no later than March 26, 1975.

All of this support to the housing market helped the sales of new one-family homes climb from a seasonally adjusted annual rate of 411,000 units in February 1975 to 463,000 units in March, and to 570,000 units in April.

These programs directed toward new home sales most certainly have helped the recovery in single family construction. The seasonally adjusted annual rate of starts in this sector climbed 29 percent between the first and third quarters of 1975, or from 740,000 units to 967,000. The third quarter rate was 85 percent of the 1.1 million unit single family rate for the same period in 1973, and it represents a reasonable level of production at this point in time.

Mortgage interest rates should soften during most of 1976, and thus provide further help to the single family sector. The strong savings flows in the first half of 1975 were a sign that mortgage rates would drop in the second half. Savings and Loan outstanding advances, which had climbed from \$15.1 billion in December 1973 to \$21.8 billion at the end of 1974, were decreasing; and Savings and Loans were rebuilding liquidity. Then at midyear, the Federal Reserve Board, concerned about growth in the money supply, turned to restrictive monetary policies—and short-term interest rates began to rise again. This increase in short-term rates brought the threat of another disintermediation period for thrift institutions and kept mortgage interest rates at high levels. The Federal Reserve Board's recent return to an easier monetary policy should translate into lower mortgage interest rates in the first half of 1976. They should drop from the present 9 to 9.25 percent levels to an 8.50 to 8.75 percent range.

Fears of renewed significant inflation and a stronger demand in the money markets for capital expenditures and consumer debt will prevent a sharper drop in mortgage rates. The

second half of 1976 should see a stabilization of these rates and a slight downturn in single family starts.

The multifamily sector is faced with severe problems and its recovery is likely to be restricted. In third quarter 1975, multifamily starts were at a 292,000 unit seasonally adjusted annual rate, or 68 percent below the 1973 level of 913,000. This sector has been plagued by overbuilding of condominium units and restrictions that have made rental unit construction unfeasible.

Approximately 75 percent of the condominium construction in the United States occurred in Florida and California in the early 1970's, and Florida alone accounted for more than 40 percent of the total. A large unsold inventory, especially in Florida, has resulted. In Dade County, Fl., (the Miami area) the unsold inventory is estimated to be 30,000 to 35,000 units. Florida's total new unsold condominium inventory approaches 90,000 to 100,000 units, and the level for the entire country is about 175,000 to 200,000 units. In 1973, probably the peak year for condominium production, their total starts numbered about 225,000 units. At present sales rates, many Florida areas have at least a 3-year supply of units. Any significant upturn in condominium starts in multifamily structures will have to result from penetration of different markets.

Rental units also were overbuilt in most areas of the country at one time or the other over the past 10 years. A general statement that this situation still exists is not true. In third quarter 1975, the vacancy rate of all rental units was 6.2 percent. This represents a continuation of stability in the rate that has occurred in the past year. The current rate, while above the 5.1 to 5.8 percent range of the 1969-73 period, is well below the 8 percent plus levels of the early 1960's. It is also below Federal Home Administration's (FHA) 7.5 percent benchmark for underwriting purposes in which a market can be considered viable.

To a large extent, the lower rental vacancy rates in the 1969-73 period resulted from strong growth in primary individual households among persons who were born during the post World War II baby boom. The increased rental vacancy rate in the 1974-75 period has evolved from inflation and the general economic downturn, which led to shrinking real incomes, and

then to delays in household formations, or to doubling up. The economic upturn should reverse this pattern in 1976. This reversal in turn is expected to lead to a tightening in the available rental supply.

A strong upturn in apartment rental units will have to be accompanied with solutions to a myriad of problems that confront developers and builders in this sector. Through zoning and regulation procedures, environmental and no-growth groups are putting increasing pressure on local governments to curtail multifamily construction. Frequently, rental projects take 18 to 24 months before a spade of dirt is turned. Fees are also rising rapidly. In Fairfax County, Va., the water and sewer tap fee for a single family home increased from \$275 in November 1969 to \$1,625 by April 1975.

The economics of rental construction is not favorable. Financing charges are quite high. Cash flows are not keeping pace with maintenance and operating costs. The consumer price rent index rose 38.4 percent in the 8-year period September 1967 to September 1975, or an average annual increase of 4.1 percent. In comparison, the total Consumer Price Index rose 63.6 percent, or an average annual increase of 6.4 percent. Thus rents have increased at a rate only 60 percent of that of all consumer expenses.

It is unlikely that 1976 will bring a generally favorable economic climate for new rental construction. Production will be up but only marginally.

What are some of the longer term effects of high construction costs, land prices, and energy costs?

Present demographic trends point toward increased single family demand at the end of this decade and into the 1980's. The proportion of persons 25 to 34 years of age will increase rapidly during this period. Persons in this age group are prime homebuyers. They will form families and, although they will not have as many children as their parents had, they will probably still demand three bedroom homes. Costs may push these families toward townhouses (generally a component of the single family sector) and away from detached units. The great American dream will still be a home rather than a unit in a garden apartment or high-rise apartment building. The single family

market will be helped by increases in family incomes as more women enter the labor force.

At this point in time it might be helpful to discuss in more detail whether families will be able to afford new homes. We recently completed a study which shows that the proportion of families able to afford a new home in 1975, at 22.4 percent, is close to the 22.9 percent proportion in 1955. Incomes have increased as rapidly as housing costs.

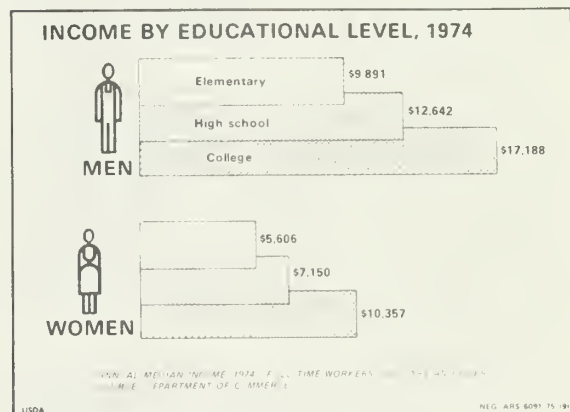
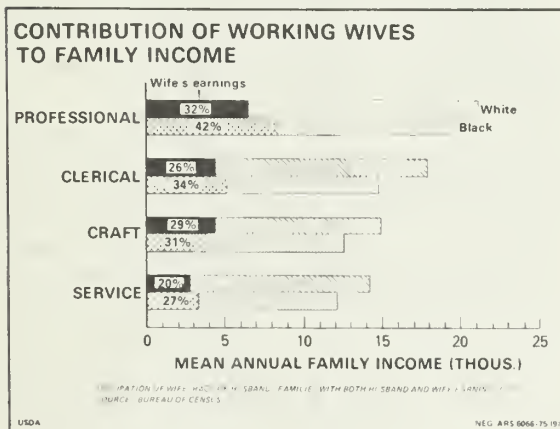
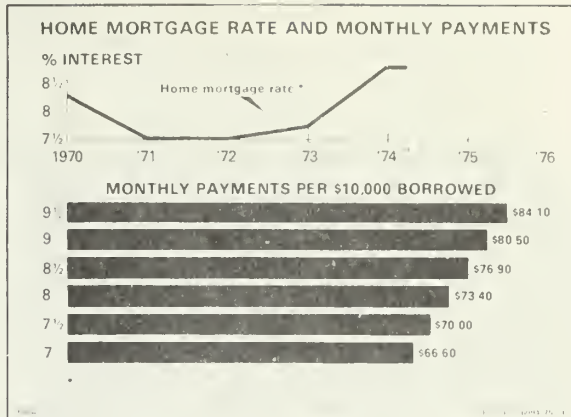
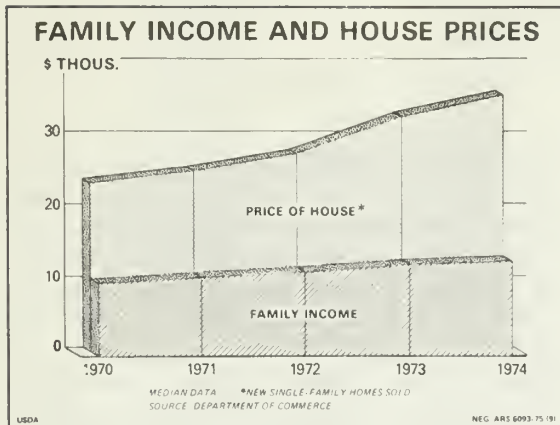
Rising energy, food, transportation, and other expenses threaten to force more families out of the market. How are builders reacting to this? Their initial reaction has been to reduce the amenities offered in both new for sale and new rental units. For example, the proportion of new homes that had ranges included in the sales price is expected to drop to 77 percent in 1975 from 96 percent in 1974. This change was reported in an NAHB survey of builders last spring. They also reported fewer refrigerators, dishwashers, disposals, trash compactors, washers, and dryers. In the spring survey, these builders did not report a decline in size of the homes. Since new units must compete with the existing inventory, changes will tend to be marginal and slow. A growing number of builders are exploring basic homes—units of 1,000 to 1,200 square feet that can be easily added to in the future. These homes are intended to attract more moderate income families into the market. A combination of basic homes and more townhouses will tend to lower the median square feet of floor area in single family homes in the next few years.

Multifamily construction should have an increasing condominium component. The tax advantages of ownership and the restricted economics of rental construction will be the principal causes of this shift.

In fact, the rental sector may be in short supply by 1977. The present level of vacant units will decline significantly as the low level of new construction and completions fails to keep up with renewed demand as the economy expands again.

Finally, housing families in the United States will continue to be a function of our general economy as it has been in the past. This country's economic system has many problems which must be solved to provide stability and growth on a continuing basis.

SOME NEW USDA CHARTS¹



¹Black and white photographic prints or colored slides of charts may be ordered from Photography Division, Office of Communication, U.S. Department of Agriculture, Washington, D.C., 20250. Slides are 30

cents each and prints are \$2.70 (8" X 10" or less). When ordering, please give negative number, title of chart, and, if a print, the size desired.

CHARTBOOK ON WORKING WOMEN

"U.S. Working Women: A Chartbook," issued by the U.S. Department of Labor, Bureau of Labor Statistics, presents a wide array of data on the characteristics of American working women and their changing status over the past quarter of a century. The chartbook provides information on women's

employment and unemployment, marital and family status, and income and education.

The chartbook, Bulletin 1880, is for sale for \$1.75 by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402. (Stock No. 029-001-01780-4)

DIETARY GUIDANCE FOR FOOD STAMP FAMILIES //

by Betty Peterkin
Agricultural Research Service

Three of the four revised USDA family food plans—low-cost, moderate-cost, and liberal—were presented at the Annual Agricultural Outlook Conference in December 1974.¹ The thrifty food plan (table 1), which replaces the economy plan (the least expensive of the plans), was released in September 1975.² The thrifty plan will be used in the preparation of guidance materials for the many consumers and leaders who request information from the Department on how to economize on food. The estimated cost for this plan is given in table 2 and will appear regularly in *FAMILY ECONOMICS REVIEW*.

Most families will find the cost for one of the four USDA plans for a family of their size and composition similar to the amount they spend for food at home. For example, in October 1975 a family of four with two elementary school children spent about \$38 a week for the thrifty plan, \$50 for the low-cost plan, \$62 for the moderate-cost plan, and \$75 for the liberal plan.

The plans allow for the number of persons and the sex and age of persons in the family. To do this, each plan specifies amounts of foods of different types (food groups) that together will provide nutritious diets for men, women, and children of different ages and for pregnant and nursing women. These amounts of food groups can be totaled for persons of the sex and age of family members to determine the plan for any family.

Families following the plans may choose from the food groups those foods that they can afford, that they can store properly, that they

know how to prepare, and that they enjoy eating. Foods within a food group are generally similar to each other in nutritive value. In some groups—meat, poultry and fish, for example—one food in the group may be used to replace another in a meal. Each group is of special importance for one or more nutrients or as a source of food energy. While several food groups may provide appreciable amounts of the same nutrient, the cost of providing the nutrient may differ considerably among groups. For example, foods in both the meat and bread groups provide iron; but a milligram of iron from the meat group costs much more than a milligram of iron from the bread group.

The 1974-75 food plans replace plans developed in 1964. They take into account new information about nutritional needs, nutritive values of foods, food prices, and food consumption of families. The thrifty food plan was developed using the same nutritional goals and the same procedures as the three more costly plans. It differs only in cost level and in the group of survey households used as the basis for food consumption patterns in its development. For a discussion of the reasons for revising the food plans, see the Winter 1975 issue of *FAMILY ECONOMICS REVIEW*.

Food Consumption Patterns and the RDA

The food consumption patterns used in developing the thrifty food plan were based on survey data for persons in households with relatively low food costs. Foods in these patterns provided the Recommended Dietary Allowances (RDA) plus 5 percent for some nutrients, but not for others. (The RDA were increased by 5 percent in evaluating food patterns to allow for nutrient loss associated with the discard of a small amount of edible food as plate waste or because of spoilage and the like.) Patterns for all sex-age categories provided the RDA plus 5 percent for protein, vitamin A value, thiamin, riboflavin, niacin, vitamin B₁₂,

¹Peterkin, B. USDA Family Food Plans, 1974, USDA, ARS-NE-36, *Family Economics Review*, Winter 1975; Peterkin, B., The Food Plans and Family Budgeting, USDA, ARS-NE-36, *Family Economics Review*, Spring 1975.

²Peterkin, B., Chassy, J., and Kerr, R., The Thrifty Food Plan, USDA, ARS, CFE(Adm.)326, September 1975.

Table 1. Thrifty food plan -- Amounts of food for a week $\frac{1}{1}$

Family member	Milk, cheese, ice cream $\frac{2}{1}$	Meat, poultry, fish $\frac{3}{1}$	Eggs	Dry beans and peas, $\frac{1}{4}$ lb	Dark-green, deep-yellow vegetables $\frac{1}{2}$ lb	Citrus fruit, tomatoes $\frac{1}{2}$ lb	Potatoes	Other vegetables, fruit $\frac{1}{2}$ lb	Cereal	Flour	Bread	Other bakery products $\frac{1}{2}$ lb	Fats, oils	Sugar, sweets $\frac{1}{2}$ lb	Accessories
	qt	lb	No	lb	lb	lb	lb	lb	lb	lb	lb	lb	lb	lb	lb
Child:															
7 months to 1 year	4.95	0.39	1.2	0.15	0.41	0.55	0.09	2.49	6/1.02	0.02	0.08	0.04	0.04	0.19	0.05
1-2 years	3.30	.83	3.3	.17	.22	.89	.65	2.26	6/1.02	.31	.78	.24	.11	.30	.37
3-5 years	3.54	.95	2.5	.28	.20	.88	.27	2.28	1.03	.37	.94	.38	.74	.59	.84
6-8 years	4.22	1.27	2.4	.49	.22	1.10	1.23	2.50	1.12	.62	1.42	.79	.51	.94	.84
9-11 years	4.92	1.61	3.4	.53	.28	1.52	1.48	3.38	1.34	.81	1.82	1.10	.60	1.20	1.10
Male:															
12-14 years	5.18	1.79	3.6	.67	.33	1.45	1.59	3.30	1.22	.81	2.07	1.13	.77	1.21	1.45
15-19 years	5.08	2.35	4.0	.43	.32	1.70	2.10	3.43	.98	.99	2.36	1.46	1.00	1.05	1.73
20-54 years	2.57	3.03	4.0	.44	.39	1.80	2.02	3.69	.89	.92	2.29	1.33	.95	.86	1.24
55 years and over	2.37	2.45	4.0	.25	.51	1.85	1.75	3.77	1.09	.80	1.90	1.12	.79	.94	.73
Female:															
12-19 years	5.35	1.80	3.8	.28	.42	1.74	1.22	3.61	.72	.76	1.49	.84	.51	.74	1.36
20-54 years	2.81	2.41	4.0	.27	.52	1.86	1.51	3.39	.90	.67	1.41	.67	.57	.57	1.18
55 years and over	2.85	1.84	4.0	.19	.60	2.02	1.26	3.73	1.12	.68	1.30	.58	.37	.45	.66
Pregnant	17/5.25	2.69	4.0	.42	.56	2.17	1.89	4.03	1.13	.58	1.41	.66	.59	.58	1.48
Nursing	17/5.25	3.00	4.0	.38	.57	2.36	1.92	4.27	.98	.63	1.56	.82	.80	.75	1.54

1/ Amounts are for food as purchased or brought into the kitchen from garden or farm to prepare all meals and snacks for the week.
Amounts allow for a discard of about 5 percent of the edible food as plate waste, spoilage, etc.

2/ Fluid milk and beverage made from dry or evaporated milk. Cheese and ice cream may replace some milk. Count as equivalent to a quart of fluid milk:
Natural or processed Cheddar-type cheese, 6 oz; cottage cheese, 2-1/2 lb; ice cream or ice milk, 1-1/2 qt; unflavored yoghurt, 4 cups.

3/ Bacon and salt pork should not exceed 1/3 lb for each 5 lb of this group.

4/ Weight in terms of dry beans and peas, shelled nuts, and peanut butter. Count 1 lb of canned dry beans--pork and beans, kidney beans, etc.--as .33 pound.

5/ Includes coffee, tea, cocoa, soft drinks, punches, ades, leavenings, and seasonings.

6/ Cereal fortified with iron is recommended.

7/ For pregnant and nursing teenagers, 7 qt are recommended.

Table 2. Cost of food at home estimated for food plans at four cost levels, October 1975, U.S. average^{1/}

Sex-age groups	Cost for 1 week				Cost for 1 month			
	Thrifty plan Dollars	Low-cost plan Dollars	Moderate-cost plan Dollars	Liberal plan Dollars	Thrifty plan Dollars	Low-cost plan Dollars	Moderate-cost plan Dollars	Liberal plan Dollars
FAMILIES								
Family of 2: ^{2/}								
20-54 years.....	22.40	29.30	36.80	44.30	97.00	126.80	159.50	192.10
55 years and over.....	19.90	25.70	32.10	38.50	86.50	111.90	139.30	167.00
Family of 4:								
Couple, 20-54 years and children--								
1-2 and 3-5 years.....	31.70	41.10	51.40	61.80	137.10	177.80	222.40	267.60
6-8 and 9-11 years.....	38.20	49.60	62.40	75.00	165.50	215.00	270.30	325.30
INDIVIDUALS ^{3/}								
Child:								
7 months to 1 year.....	4.40	5.40	6.70	7.90	19.10	23.60	28.90	34.20
1-2 years.....	5.10	6.60	8.10	9.70	22.10	28.40	35.10	42.00
3-5 years.....	6.20	7.90	9.80	11.80	26.80	34.10	42.30	51.00
6-8 years.....	7.90	10.20	12.80	15.40	34.30	44.30	55.60	66.90
9-11 years.....	9.90	12.80	16.10	19.30	43.00	55.40	69.70	83.80
Male:								
12-14 years.....	10.60	13.70	17.10	20.60	45.90	59.30	74.30	89.30
15-19 years.....	11.70	15.10	19.00	22.90	50.70	65.60	82.30	99.30
20-54 years.....	11.30	14.80	18.70	22.60	48.70	64.10	81.00	97.90
55 years and over.....	9.90	12.90	16.10	19.40	43.10	56.00	69.90	84.30
Female:								
12-19 years.....	9.40	12.20	15.10	18.10	40.80	52.70	65.40	78.30
20-54 years.....	9.10	11.80	14.80	17.70	39.50	51.20	64.00	76.70
55 years and over.....	8.20	10.50	13.10	15.60	35.50	45.70	56.70	67.50
Pregnant.....	11.30	14.60	18.00	21.50	48.90	63.10	78.00	93.20
Nursing.....	12.10	15.50	19.30	23.10	52.20	67.20	83.60	100.00

1/ Assumes that food for all meals and snacks is purchased at the store and prepared at home. Estimates for each plan were computed from quantities of foods published in the Winter 1976 (thrifty plan) and Winter 1975 (low-cost, moderate-cost, and liberal plans) issues of Family Economics Review. The costs of the food plans were first estimated using prices paid in 1965-66 by households from USDA's Household Food Consumption Survey with food costs at four selected levels. These prices are updated by use of "Estimated Retail Food Prices by Cities" released monthly by the Bureau of Labor Statistics.

2/ 10 percent added for family size adjustment. See footnote 3.

3/ The costs given are for individuals in 4-person families. For individuals in other size families, the following adjustments are suggested: 1-person--add 20 percent; 2-person--add 10 percent; 3-person--add 5 percent; 5- or 6-person--subtract 5 percent; 7- or more-person--subtract 10 percent.

and ascorbic acid, but patterns for the following categories were short in certain nutrients:

Nutrient	Sex-age category
Calcium	Teenage girls; women; men, 55 years and older.
Iron	Infants; children, 1 to 2 years; teenage girls; women, 20 to 54 years.
Vitamin B ₆ ¹	Teenage girls; women; men, 55 years and older.
Magnesium ¹	All, 12 years and older.

¹ Evaluation based on rough estimate of content of food making up food consumption patterns. Content of this nutrient in many foods in the patterns is not known.

Fat in consumption patterns of older teenage boys, of men, and of women 20 to 54 years of age provided more than 40 percent of food energy—the upper limit for fat allowed in the plans.

To meet nutritional goals within cost limitations for the thrifty plan, adjustments to consumption patterns were required. These adjustments involved the use of less meat, poultry, fish, and eggs and more dry beans, dry peas, and grain products. Food consumption patterns for the three more expensive plans also had nutritional shortcomings, for which adjustments to patterns were required in developing the plans.

Nutritional Quality of the Thrifty Plan

The thrifty plan provides the RDA plus 5 to 10 percent for food energy and the RDA plus 5 percent or more for protein, calcium, iron, vitamin A value, thiamin, riboflavin, niacin, and ascorbic acid (table 3). Fat provides 30 to 39 percent of the food energy. Nutritive values for average selections of foods within food groups, as made by survey households with relatively low food costs, were assumed in evaluating the plan.

The higher iron enrichment level for bread and flour proposed by the Food and Drug Administration in 1973 was assumed in the development of the thrifty plan (and the three more expensive plans). If that enrichment level is not adopted, the nutritional goal for iron will not be met by the thrifty plan (or the three more expensive plans) for young children, teen-

age girls, and women of childbearing age, when average selections within food groups are made. However, the goal can be met through the frequent selection of foods providing important amounts of iron, such as liver, heart, kidney, lean meats, shellfish, dry beans, dry peas, dark-green vegetables, dried fruit, cereals with iron added, and molasses. Plans for all sex-age categories provide iron in excess of the amount specified by the National Academy of Sciences-National Research Council (NAS-NRC) as likely to be furnished by a balanced and varied diet—6 mg of iron/1000 kcal—when current enrichment levels are assumed and average selections within food groups are made. Iron-fortified cereal is recommended for infants and children 1 to 2 years of age.

The vitamin B₆, vitamin B₁₂, and magnesium content of many foods in the plan is not known. Nevertheless, a rough estimate was made of levels provided by the plan. Foods in the thrifty plan (and the three more expensive plans) furnish more than the RDA for vitamin B₁₂ but do not meet the RDA for vitamin B₆ and magnesium for several sex-age categories. Plans that meet the nutritional goals for vitamin B₆ and magnesium can be developed by using the food composition data available, but such plans contain large amounts of vegetables, fruit, and cereal—two to three times as much as consumed by some sex-age categories in 1965-66. Such distortion of food consumption patterns is not justified on this basis. Therefore, 80 percent of the RDA for vitamin B₆ and magnesium was used as the basis for goals in developing all of the USDA food plans.

Phosphorus levels of foods in the plans were not calculated but are believed to be well above the RDA. The use of iodized salt is recommended as an efficient way to supplement dietary iodine.

The requirement for vitamin D for normal persons can be met by exposure to sunlight. However, for infants and elderly persons whose activities limit their exposure to sunlight, the allowance should be provided in the diet by such foods as eggs, liver, butter, and milk fortified with vitamin D or by supplementation.

Insufficient reliable information is available on the content in foods of the three other nutrients for which RDA are set—vitamin E, folacin, and zinc—to make reliable estimates of levels provided by the plans.

Table 3. Nutritive value for thrifty food plan^{1/} as percentage of the nutritional goals^{2/}

	Child				Male			Female		
	Under 1 year	1-2 years	3-5 years	6-8 years	9-11 years	12-14 years	15-19 years	20-54 years	55 years or more	Pregnant Nursing
Food energy	100	100	100	100	100	100	100	100	100	100
Protein	223	204	182	200	208	198	170	150	130	132
Calcium	166	100	100	125	126	106	106	110	100	103
Iron	3/ 100+	3/ 100+	115	185	179	135	152	257	233	125
Vitamin A value	173	140	134	120	117	100	109	108	110	111
Ascorbic acid	100	100	105	126	157	149	167	164	163	116
Niacin 1/	194	218	204	210	213	215	204	224	221	229
Riboflavin	271	219	166	171	192	172	147	133	133	136
Thiamin	157	175	146	137	144	139	134	135	146	127
Vitamin B6	330	285	195	172	165	148	118	115	110	100
Vitamin B12	4/ 100+	4/ 100+	286	244	223	184	193	172	159	159
Magnesium	313	174	146	148	143	126	111	114	103	100

^{1/} Nutritive value of the edible portion of food as purchased, adjusted to allow for vitamin losses in cooking. Discard of meat drippings and one-half of the separable fat from meat is assumed. For bread and flour, enrichment levels for iron proposed in 1973 are assumed. Values for niacin for all foods include niacin in the food and an estimate of the niacin formed in the body from the protein substance, tryptophan. Values for vitamin B6, vitamin B12, and magnesium are estimated for many foods in the plans because of insufficient information on content of foods.

^{2/} Nutritional goals are based on the Recommended Dietary Allowances, 1974, for all nutrients except vitamin B6 and magnesium, for which 80 percent of the RDA is used. The goals, the RDA base plus 5 percent, allows for some discard of edible food. Therefore, the amounts of foods in the plan provide 5 percent more than the percentage shown, if no edible food is discarded. A range of 105 to 110 percent of the RDA for food energy is allowed. Fat is limited to provide no more than 40 percent of food energy.

^{3/} Assumes that cereal fortified with iron is used. Percentage varies depending on the level of fortification of cereals used.

^{4/} Percentage varies depending on level of fortification of cereals used.

Food plans developed to meet the RDA would be expected to provide generous amounts of nutrients for most persons. The NAS-NRC states that the basis for the RDA is such that "even if a person habitually consumes less than the recommended amounts of some nutrients, his diet is not necessarily inadequate for those nutrients."³

Allowances are not specified by the NAS-NRC for some dietary factors of adequate diets. An example is linoleic acid, an essential fatty acid found in large concentrations in many oils that come from plants. Also, dietary fiber is necessary for the normal functioning of the intestinal tract. Good sources of fiber include whole-grain cereals, fruits, vegetables, and legumes, such as dried peas and beans.

Planning Meals Based on the Thrifty Plan

Meals based on the thrifty plan will not be elaborate. They rely heavily on cereal and bread, and contain less meat, poultry, and fish and less vegetables and fruit than most families customarily eat. However, food managers with interest and skill in buying and preparing food can serve varied and appetizing meals based on the plan.

The week's menus in table 4 illustrate how foods in the plan can be combined into appetizing and nutritious meals and snacks. These meals are prepared from foods in the thrifty food plan for four-person families with the average sex-age composition of those receiving food stamps.⁴ Sample meals for a month, with recipes and lists of food used in their preparation for a family of four following the plan, have been prepared and tried by several families receiving food stamps. These sample

meal plans are available upon request from the Consumer and Food Economics Institute, Agricultural Research Service, U.S. Department of Agriculture, Hyattsville, Md. 20782. Additional economical meal plans, allowing for preference of individual families for foods within food groups, can be prepared based on the thrifty plan.

In estimating costs for the thrifty plan, food selections within food groups are based on selections of the survey households used in deriving food consumption patterns for the plan. Such selections are used, recognizing that some families following the plan might not have either the skill or the opportunity to consistently select foods within food groups that are more economical than those made on the average by these survey households. Many families on limited food budgets will have to change the amounts of food groups they ordinarily use to follow the plan. Nutrition educators can use the plan and materials based on the plan to encourage families to make these changes to achieve nutritious diets.

Other Economical Food Plans

The thrifty plan is only one of many nutritious combinations of food groups at extremely low cost. Amounts of food groups in consumption patterns could be changed in other ways to provide nutritious diets. While such combinations would deviate further than the thrifty plan from food consumption patterns, they might be acceptable to some households.

Other food plans at the same or lower cost than the thrifty plan could be developed if selections of foods within food groups were limited to only those foods which are the least expensive, rather than selections typical of those of survey households. For example, the thrifty plan contains some fluid milk, as was typical of the consumption of the survey households. Nonfat dry milk costs only about half as much as fluid milk, yet provides as much or more of most nutrients supplied by fluid milk. Therefore, a plan that assumes the use of nonfat dry milk exclusively might be developed at a cost lower than the cost of the thrifty plan. Or a plan at the same cost as the thrifty plan might be developed with only nonfat dry milk and more meat, poultry, and fish

³Recommended Dietary Allowances 1974, Eighth Edition. National Academy of Sciences-National Research Council, 1974.

⁴The meals presented here are slightly less costly than the sample meals presented in the Fall 1975 issue of *Family Economics Review*, which illustrated the kinds of meals four-person households receiving food stamps might be able to afford using the total coupon allotment for a four-person household in the Food Stamp Program. The value of the coupon allotment, based on the cost of the thrifty plan for a household consisting of husband, wife, and two elementary school children, is slightly higher than the cost of the thrifty plan for the average four-person household receiving food stamps because the last plan has proportionately more young children and women.

Table 4. A week's menus based on the thrifty food plan

	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
B R E A K F A S T	Orange juice French toast Sirup Beverage	Orange juice Ready-to-eat cereal Doughnut Beverage	Peaches, sliced Grits Cinnamon toast Beverage	Orange juice Eggs Pan-fried potatoes Toast Beverage	Peaches, sliced Ready-to-eat cereal Toast Beverage	Apple juice Farina Toast Beverage	Apples, quartered Pancakes Sirup Beverage
L U N C H	Beef pot roast Gravy Mashed potatoes Mixed vegetables Bread Ice milk Beverage	Grilled cheese sandwiches Macaroni salad Baked apples Beverage	Frankfurters Sauerkraut Bread Oatmeal cookies Beverage	Beef macaroni soup Saltine crackers Plums Beverage	Noodle soup Peanut butter and jelly sandwiches Carrot sticks Graham crackers Beverage	Frankfurter bean soup Saltine crackers Oatmeal cookies Beverage	Cheese sandwiches Gelatin (with apple juice and celery) Meringue pie Beverage
D I N E R	Beans in tomato sauce Macaroni salad Pear halves Cornbread Gelatin Beverage	Beef stew with vegetables Cornbread Ice milk Beverage	Beef pie with vegetables Refrigerator biscuits Lettuce wedges with dressing Peanut butter cake Beverage	Fried chicken Rice Gravy Corn Bread Peanut butter cake Beverage	Beef patties Baked potatoes Stewed tomatoes Muffins Ice milk Beverage	Cheese rarebit on toast French-fried potatoes Collards Meringue pie Beverage	Spaghetti with meat sauce Tossed salad (lettuce, carrots, dressing) Bread sticks Ice milk Beverage
S N A C K	Doughnut	Bread and jelly sandwiches	Cheese and saltine crackers	Doughnut	Peanut butter cake	Graham crackers	Ready-to-eat cereal

Note: Milk for everyone at least once daily, and for children, teenagers, and pregnant and nursing women, more often. Spreads for bread and sugar for cereal, coffee, and tea may be added, if desired.

and less dry beans and grain products than the thrifty plan.

Through guidance materials and nutrition education programs, families using food stamps and other families wishing to economize on food are encouraged to, and may alter their consumption to, include only the economical foods within the food groups.⁵ However, for purposes of estimating the nutritive value and the cost of a plan for use nationwide, selections

of foods based on those made on the average by survey families with relatively low food costs are believed to be more reasonable.

⁵One USDA publication that provides information on food shopping for consumers interested in economizing on food is "Your Money's Worth in Foods," USDA, HG-183. Single copies are available free from the Office of Communication, U.S. Department of Agriculture, Washington, D.C. 20250.

THE THRIFTY FOOD PLAN AND THE FOOD STAMP ALLOTMENT

The thrifty food plan has replaced the economy plan as the basis for the coupon allotment in the Food Stamp Program in the 48 contiguous States and the District of Columbia. The coupon allotment (based on the cost of the thrifty plan for the family of four with two

elementary school children), eligibility standards, and purchase requirements for the program, effective January 1, 1976, were released in the **FEDERAL REGISTER**, December 1, 1975.

AGRICULTURAL HANDBOOK 102 REVISED

A major revision of Agriculture Handbook 102 "Food Yields Summarized by Different Stages of Preparation" by Ruth H. Matthews and Young J. Garrison was published in September 1975. This handbook updates the data in the first edition published in 1956 and provides new data that take into account the many technological developments that have occurred in the production, processing, and preparation of food, as well as changes in equipment and cooking procedures.

Data in this publication are intended for reference purposes or to be applied to various practical problems, such as developing food plans, estimating food costs, requisitioning food supplies, establishing food allotments for needy families, and preparing food-buying guides for such groups as schools, camps, and nursing homes. In addition, the data in this publication are to serve as the principal basis for values on refuse in the next edition of Agriculture Handbook No. 8, "Composition of Foods...Raw, Processed, Prepared."

Since publication of the first edition of this handbook there have been a number of changes that have affected food yields. For example, new cultivars have been developed to meet the

needs of mechanical harvesting or to improve economic benefits through greater crop yields or increased resistance to disease. Leaner type hogs have been developed in response to the demand for leaner meat. Numerous freeze-dried foods, meat analogs, imitation products, new forms of pasta, precooked cereals, and various other kinds of manufactured convenience foods are now marketed that were no more than ideas a few years ago. The use of microwave ovens may affect the yield of foods cooked or reheated in this equipment. The internal temperature recommended for cooking pork (77° C, 170° F) has been lowered, shortening the cooking time and increasing the yield of cooked pork. New data reflecting the effects of these developments on food yields are given in the revised Handbook 102.

To obtain copies send check or money order (no cash) for \$2.00 per copy to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. For information on machine-readable tapes of the data, write: USDA, ARS, Consumer and Food Economics Institute, Survey Statistics Group, 6505 Belcrest Road, Hyattsville, Md. 20782.

CONVENIENCE FOODS—1975 COST UPDATE¹

by Larry G. Traub, Economic Research Service
and
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With food prices increasing, with real incomes not improving appreciably, with rising awareness of good nutrition, with more social and work demands on the housewife, and with food processing firms continually introducing new products, the homemaker's decision on what foods to buy for her family has become very complex. Information on the cost differential between selected convenience or processed food forms and their home-prepared or fresh counterparts can aid the homemaker in these decisions.

An extensive cooperative study on convenience foods was undertaken in the late 1950's by the Economic Research Service (ERS) and the Agricultural Research Service (ARS) of the U.S. Department of Agriculture. The study included foods in fresh, canned, dried, and frozen forms, representing several food categories including baked goods, pasta, and rice; dairy products; meat, poultry, and fish; vegetables and fruits; and baby food, desserts, candy and soups. A total of 247 items was studied. Cost, comparative yield, nutritive value, quality, and preparation time of convenience foods and their home-prepared counterparts were studied and the results reported in a series of publications² that appeared in the 1960's. Average cost per serving figures showed that 116 out of the 158 convenience foods studied were more expensive than their home-prepared counterpart.

Food and fuel prices have risen substantially, the value of homemakers' time has increased, and a number of "new generation" convenience products have been introduced to the market since the previous study. Therefore, ERS and ARS conducted a study in 1974 and 1975 to evaluate cost, volume of sales, home preparation time and use of fuel, and eating quality of selected convenience foods and their home-prepared counterparts. Only ingredient cost information will be presented in this paper.

Costs were computed for 295 foods—107 were either home-prepared or fresh foods and 188 were convenience foods of which 162 have a home-prepared or fresh counterpart. Forty-three "new generation" convenience foods, which were not on the market in 1960, were included in the study.

Laboratory Procedures

Fifty-one food items tested in 1960 were retested in the laboratory to determine differences in total yield and proportion of major ingredients since the previous study. In addition, laboratory tests were made for 36 "new generation" convenience foods and for several other products not previously tested. Most of the home-prepared counterparts were also studied. Three tests were conducted for each product.

¹Convenience foods are defined here as "any fully or partially prepared food in which significant preparation time, culinary skills, or energy inputs have been transferred from the homemaker's kitchen to the food processor and distributor." Products introduced before 1960 will be referred to as "established" convenience foods, while those introduced since 1960 will be referred to as "new generation" convenience foods.

²Chapman, V. J., Sweeney, J. P., Martin, M. E., and Dawson, E. H., *Fruits: Consumer Quality Characteristics, Yield, and Preparation Time of Various Market Forms*, U.S. Dept. Agr., Home Econ. Res. Rpt. No. 29, 1965. Gilpin, G. L., Murphy, E. W., Marsh, A. C., Dawson, E. H., Bowman, F., Kerr, R. G., and Snyder, D. G., *Meat, Fish, Poultry, and Cheese: Home Preparation Time, Yield, and Composition of Various Market*

Forms, U.S. Dept. Agr., Home Econ. Res. Rpt. No. 30, 1965. Harp, H. H., and Dunham, D. F., *Comparative Costs to Consumers of Convenience Foods and Home-Prepared Foods*, U.S. Dept. Agr., Market. Res. Rpt. No. 609, 1963. King, P. L., Gilpin, G. L., and Dawson, E. H., *Comparison of Several Market Forms of Potato Products*, *Jour. Home Econ.* 54 (10), 1962. Matthews, R. H., Murphy, E. W., March, A. C., and Dawson, E. H., *Baked Products: Consumer Quality, Composition, Yield, and Preparation Time of Various Market Forms*, U.S. Dept. Agr., Home Econ. Res. Rpt. No. 22, 1963. Sweeney, J. P., Chapman, V. J., Martin, M. E., King, P. L., and Dawson, E. H., *Vegetables: Consumer Quality, Yield, and Preparation Time of Various Market Forms*, U.S. Dept. Agr., Home Econ. Res. Rpt. No. 17, 1962.

Convenience products were prepared according to package directions, and each home-prepared item according to a recipe which, whenever possible, was formulated to contain the same types of ingredients as the corresponding convenience item. For example, if the ingredient label of convenience food specified that it contained butter rather than margarine, then butter was used in the home-prepared food. Home-prepared items initially tested in 1960 were prepared using the same recipe as in the earlier study.

One market brand and container size of each convenience food available at a retail food store in the Washington, D.C., metropolitan area were tested. Where more than one brand or size was available, a nationally advertised brand of medium price and container size was selected for study. Food containers for the selected brand were chosen randomly from the grocery shelves. All foods requiring refrigeration were stored at 38° F, frozen items at 0° F, and canned goods at room temperature.

Finished products were weighed to the nearest gram and then grams converted to ounces. The number of servings per recipe for the home-prepared product or per market unit for the corresponding convenience item was calculated on the basis of equal weight servings. Individual components of the prepared convenience products were weighed, except where small particle size or consistency of the food did not permit separation of ingredients. For example, in the testing of pizza, tomato sauce and cheese could be separated from the crust but could not be separated accurately from each other. Components in the products were weighed to permit comparison between the quantity of the most costly ingredients, such as the amount of shrimp in shrimp newburg.

The cost of each ingredient used in home-prepared products was based on the actual amount of food required. For example, in a recipe which required two cups of cooked diced chicken, the weight of raw chicken which must be cooked to obtain this amount was used for costing purposes. Vegetables that must be trimmed or pared or canned ingredients that must be drained before use are other examples of foods for which yield must be considered. To allow for differences due to such factors as variety, geographic location, season, container size, and brand of ingredients consumers com-

monly use in recipes, current data on food yields³ were used in reporting the amount of food ingredients required for purchase. Because these data are average figures based on many samples, it is believed that this manner of reporting the "as purchased" weights of ingredients gives a more accurate representation than could be calculated using figures obtained in only three tests.

Cost Procedures

ERS collected price data for national and regional volume brand movers and nonbrands (store brands, private labels, and contract labels) over 12 months (July 1974 through June 1975) from leading food retail chainstores in Philadelphia, Milwaukee, Oakland, and New Orleans.

The first step in computing costs was to weight each monthly price per ounce for brand and chainstore effects. The brand effect is the ratio of brand food and nonbrand food sales to their total sales. To compute the brand effect when both a brand and nonbrand food product were sold by a given chain in a given city for a given month, the price of the volume brand mover was weighted (multiplied) by 0.82; the price of the nonbrand was weighted by 0.18; and the two prices summed. These weights were provided by the National Association of Food Chains. The weights assume no difference in brand-effect ratios among products. Although brand-effect ratios differ among products, unfortunately, no data were available to compute unique brand-effect ratios for each product.

The chainstore effect is the ratio of food sales of an individual chainstore relative to sales of all participating chainstores that sold the product in the market. To compute the chainstore effect for each city during a given month, the price of a product at each chainstore was weighted by its respective chainstore ratio. The weighted prices for each chainstore were then summed. The sales data for computing chainstore ratios were from the 1975 GROCERY DISTRIBUTION GUIDE, Metro Market Studies, Inc.

³Matthews, R. H., and Garrison, Y. J. *Food Yields Summarized by Different Stages of Preparation*. U.S. Dept. Agr., Agr. Handb. No. 102, 1975.

The second step in computing costs was to multiply the weighted price per ounce by the number of ounces of the convenience form, or by the number of ounces of the ingredients in the home-prepared formulation for the months in the given city that all ingredients were available to prepare the food. Whenever possible, the most costly ingredient(s) was(were) held in the same proportion to all ingredients in the home-prepared recipe as was found in the convenience counterpart. Finally, costs were totaled and were divided by the number of servings of the food product. The result was a comparative cost for equivalent weight servings.

Cost Comparisons

The table presents information on the comparative cost of selected convenience foods and their home-prepared or fresh counterparts. Unless otherwise indicated, the results are average cost per serving figures computed from prices collected in four cities for 12 months.

Of the 162 convenience foods studied, only 36 percent had a cost per serving lower than their home-prepared or fresh counterpart. Only 8 of 43 "new generation" convenience foods were less expensive than similar products prepared from home recipes. A summary of the results of the study follows:

- Nearly all of the frozen, chilled, or ready-to-serve baked goods were more expensive than preparing them from recipes or mixes. Better than one-half the products made from a complete mix were less expensive than their home-prepared counterpart.

- Frozen and chilled cheese pizzas were about 60 percent more expensive than both home-prepared and packaged combination cheese pizzas.

- All forms of margarine were less expensive than butter in bulk or quarters, but margarine in a tub or in a squeeze bottle was higher in price than stick margarine. Scrambled eggs prepared from a frozen "cholesterol-free" egg product were almost twice as expensive as scrambled fresh eggs.

- All frozen beef entrees and dinners and two of three skillet main dishes made from mixes were more expensive than their respec-

tive home-prepared counterpart. For consumers desiring to save money by the addition of soy protein to ground beef patties, soy protein added to ground beef at the grocery store was found to render the most savings.

- Eight of nine chicken convenience products were more costly than similar products prepared from fresh chicken. The cost of home-prepared, batter-dipped chicken and chicken meat from whole fryers was less than one-third that of the convenience products. Both chicken a-la-king frozen in a pouch and canned chicken salad spread, two "new generation" convenience foods, were about 60 percent more expensive per serving than their respective counterpart. Consumers paid approximately 40 cents more per serving for frozen turkey dinner or tetrazzini than for the separate ingredients to prepare these dishes at home.

- Frozen fish sticks and crabcakes were less expensive, but frozen haddock dinner, tuna noodle casserole, and shrimp newburg in a pouch were considerably more expensive than these products prepared at home.

- Of the 37 vegetable convenience products studied, 16 single ingredient items in the canned or frozen form were cheaper than their fresh or home-prepared counterpart. Still, 6 of these 16 processed vegetables were more expensive than their fresh form during the fresh vegetable's growing season.

- Products prepared from dehydrated potatoes and frozen vegetable side dishes were more expensive than similar products prepared from scratch. But frozen french-fried potatoes were less expensive than french fries prepared from fresh potatoes.

- Over 60 percent of the convenience fruit and berry products had a higher cost than their fresh counterpart. Frozen orange juice concentrate was the best orange juice buy.

The cost of convenience is often a factor in the consumer's decision to buy a convenience food or to prepare the product from scratch. Consumers, however, may also want to consider factors such as nutritive value, family preferences, culinary skills, and time and equipment available for food preparation.

Product	Serving size	Fresh or home prepared	Frozen	Canned	Ready to serve	Complete mix $\frac{1}{2}$	Incomplete mix $\frac{2}{2}$	Other
	Ounces	Cents	Cents	Cents	Cents	Cents	Cents	Cents
BAKED GOODS, PASTA, AND RICE								
<u>Baked goods</u>								
Baking powder biscuits..	1.40	2.69				3.08		$\frac{3}{4}$ 4.04
Bread stuffing.....	2.12	7.26						
Range top.....	2.12							$\frac{4}{5}$ 5.37
Brownies.....	0.70	4.91	6.30		5.87	4.19	4.54	
Cake: Angel food.....	1.70	$\frac{5}{7}$ 7.29			13.20	7.98		
Bundt, fudge.....	4.10	15.28					$\frac{4}{5}$ 15.76	
Devils food.....	1.70	7.92	13.09		12.19		5.45	
Pound.....	1.10	4.09					4.27	
Yellow.....	1.20	4.91			2.55		4.19	
Cookies, sugar.....	0.50	2.20						$\frac{3}{4}$ 2.86
Muffins, corn.....	1.50	3.82					3.37	
Pancakes.....	5.30	11.15	34.40			7.31	13.13	
Pie: Apple.....	4.70	12.52	20.46		24.01	17.70	16.68	
Cherry.....	4.50	16.63	22.42		24.24	18.63		
Coconut cream.....	5.00	13.42	21.07		24.40	19.13	$\frac{5}{5}$ 14.04	
Rolls, yeast.....	1.30	2.39	3.28		6.22	3.55		$\frac{6}{6}$ 6.93
Waffles.....	3.30	6.62	18.47			4.03	7.06	
<u>Pasta and Pizza</u>								
Pizza: Cheese.....	8.30	37.31	61.89					$\frac{7}{3}$ 37.81 $\frac{3}{3}$ 58.38
Appetizer.....	8.30		$\frac{4}{4}$ 126.91					$\frac{7}{7}$ 15.87
Spaghetti.....	8.87	22.23		15.89				
<u>Rice</u>								
Cooked.....	3.35	2.89						4.35
Parboiled.....	3.35							5.08
Precooked.....	3.35							$\frac{7}{7}$ 10.30
Spanish.....	4.46	12.43		10.94				
Fried.....	2.85	13.19	25.33					
DAIRY PRODUCTS								
American cheese: Loaf.....	2.00							16.53
Sliced.....	2.00							16.82
Individually wrapped.....	2.00							$\frac{4}{4}$ 16.75
American cheese food: Loaf	2.00							12.27
Aerosol can.....	2.00							$\frac{4}{4}$ 37.73
Butter: Quartered.....	0.33							1.94
Bulk.....	0.33							1.86

See footnotes at end of table, p. 33.

Cost comparison per serving of selected home-prepared food with convenience counterparts,
4-city average, July 1974 to June 1975--continued

Product	Serving size	Fresh or home prepared	Frozen	Canned	Ready to serve	Complete mix 1/	Incomplete mix 2/	Other
	Ounces	Cents	Cents	Cents	Cents	Cents	Cents	Cents
DAIRY PRODUCTS--continued								
Cheese, fondue.....	2.72	28.95						3/4/ 33.55
Cream, whipping.....	1.00	6.60						8/ 8.60
Eggs, scrambled.....	4.10	14.67	4/ 26.07					
Margarine: Quartered.....	0.33							1.41
Soft tub.....	0.33							4/ 1.65
Liquid squeeze bottle...	0.33							4/ 1.68
Milk, nonfat.....	8.47	9.13						9/ 5.83
MEAT, POULTRY, AND FISH								
Beef								
Chili-macaroni, skillet main dish.....	9.21	27.79						4/ 10/ 30.41
Dinner.....	11.00	51.31	78.88					
Lasagne.....	9.80	52.42	4/ 84.07					
Lasagne, skillet main dish.....	8.69	35.33						4/ 10/ 26.20
Meat loaf dinner.....	9.07	41.32	70.16					
Patties.....	2.67	21.11	28.08					
Patties, soy protein added to ground beef-- At home.....	2.67	4/ 17.18						
At store.....	2.67							4/ 14.99
Pie.....	8.00	20.70	39.63					
Sloppy Joe sandwich sauce.....	2.76	11.11		4/ 17.02				
Stew.....	8.60	21.34		33.70				
Stroganoff, skillet main dish.....	7.96	45.90						4/ 10/ 47.41
Pork								
Ham.....	2.00			30.60				11/ 28.92
Sweet and sour.....	5.98	31.94	4/ 52.27					4/ 7/ 58.99
Sausage: Bulk.....	2.00	29.52	28.31	30.91				
Linked.....	2.00	38.44						
Chicken								
A-la-king.....	5.73	21.86	4/ 36.43					
Batter dipped, deep fat fried.....	2.00	12.43	39.30					
Braised whole.....	2.00	24.74		25.75				

See footnotes at end of table, p. 33.

Cost comparison per serving of selected home-prepared food with convenience counterparts,
4-city average, July 1974 to June 1975--continued

Product	Serving size	Fresh or home prepared	Frozen	Canned	Ready to serve	Complete mix 1/	Incomplete mix 2/	Other
	Ounces	Cents	Cents	Cents	Cents	Cents	Cents	Cents
MEAT, POULTRY, AND FISH--								
continued								
Chicken--continued								
Chow mein.....	6.60	39.13	54.32	32.80				
Fried: Cut-up fryers....	2.00	22.62						
Whole fryers.....	2.00	25.12						
Fried, dinner.....	10.07	39.94	62.70					
Meat.....	1.50	10.37		31.39				
Pie.....	7.70	29.28	35.63					
Salad, sandwich spread..	2.52	18.75	$\frac{1}{4}$	32.89				
Turkey								
Dinner.....	12.50	29.53	71.26					
Tetrazzini.....	8.07	41.50	$\frac{1}{4}$	78.57				
Fish and shellfish								
Haddock dinner.....	11.54	55.53	99.96					
Pollock fish sticks....	2.60	34.02	22.43					
Tuna noodle casserole..	7.78	26.17	$\frac{1}{4}$	67.37				
Crabcakes.....	2.80	60.36	52.25					
Crab-deviled.....	3.11	29.45	39.57					
Shrimp cooked.....	2.14	61.20	50.39	50.07				
Shrimp fried.....	2.56	39.74						
Partly prepared, cooked	2.56		44.74					
Partly prepared,breaded	2.56		41.65					
Prefried.....	2.56		44.10					
Diced and extruded, breaded.....	2.56		$\frac{1}{4}$	35.94				
Shrimp, newburg.....	4.20	68.88	$\frac{1}{4}$	112.77				
Shrimp, creole.....	7.46	38.48	59.79					
VEGETABLES AND FRUITS								
Vegetables								
Asparagus spears.....	2.10	23.07	20.35	19.52				
Beets: Plain.....	3.20	12.56		8.93				
Harvard style	3.20			7.55				
Broccoli spears: Plain..	3.30	13.30	16.02					
In butter sauce.....	4.23		$\frac{1}{4}$	22.08				
Hollandaise sauce.....	4.03	18.00	$\frac{1}{4}$	25.38				
Au gratin.....	5.07	25.50	$\frac{1}{4}$	36.14				
Brussels sprouts.....	2.70	13.79	11.83					

$\frac{1}{4}/10/$ 23.16

See footnotes at end of table, p. 33.

Cost comparison per serving of selected home-prepared food with convenience counterparts,
4-city average, July 1974 to June 1975--continued

Product	Serving size	Fresh or home prepared	Frozen	Canned	Ready to serve	Complete mix $\frac{1}{2}$ /	Incomplete mix $\frac{2}{2}$ /	Other
	Ounces	Cents	Cents	Cents	Cents	Cents	Cents	Cents
VEGETABLES AND FRUITS--Con.								
Vegetables--continued								
Butter beans.....	3.83	4.11	.....	11.35	.....	.....	.....	.....
Carrots: Sliced.....	2.80	6.76	.....	9.74	.....	.....	.....	.....
Diced.....	2.80	.....	.....	7.10	.....	.....	.....	.....
Corn, cut.....	2.90	12.04	11.10	11.59	.....	.....	.....	.....
Corn-on-the-cob.....	6.10	13.24	13.37	.....	.....	.....	.....	.....
Green beans: Plain.....	2.30	8.11	8.64	9.58	.....	.....	.....	.....
Bulk bag.....	2.30	.....	$\frac{4}{4}$ 7.94	.....	.....	.....	.....	.....
Casserole.....	4.30	20.98	$\frac{4}{4}$ 25.09	.....	.....	.....	.....	.....
Green peas.....	2.80	26.77	11.01	11.15	.....	.....	.....	.....
Hawaiian-style.....	3.81	14.70	$\frac{4}{4}$ 20.53	14.40	.....	.....	.....	.....
Lima beans.....	2.90	28.67	11.24	13.96	.....	.....	.....	.....
Pork and beans.....	6.86	12.76	.....	.....	.....	.....	.....	.....
Potatoes: Au gratin....	4.50	8.46	25.17	.....	.....	.....	.....	12/ 11.93
Boiled, whole.....	4.00	3.31	.....	12.69	.....	.....	.....	.....
French fried.....	2.00	10.01	6.86	.....	.....	.....	.....	.....
Hash browned.....	3.90	4.86	.....	.....	.....	.....	.....	.....
Mashed.....	3.50	3.30	.....	.....	.....	.....	.....	12/ 12.46
Patties.....	3.10	4.04	11.51	.....	.....	.....	.....	12/ 4.85
Puffs.....	2.50	8.29	6.88	.....	.....	.....	.....	.....
Scalloped.....	4.30	5.06	.....	.....	.....	.....	.....	12/ 10.74
Stuffed, sour cream and chives.....	5.64	11.52	$\frac{4}{4}$ 21.84	.....	.....	.....	.....	.....
Spinach.....	3.40	24.75	10.66	13.02	.....	.....	.....	.....
Fruits								
Cherries, red sour, pitted	13/ 3.90	21.78	.....	21.73	.....	.....	.....	.....
Coconut.....	0.30	1.71	.....	3.03	.....	.....	.....	.....
Cranberry sauce: Strained	2.40	7.29	.....	5.88	.....	.....	.....	.....
Whole.....	2.40	5.54	.....	5.83	.....	.....	.....	.....
Grapefruit sections....	3.40	12.17	.....	14.06	.....	.....	.....	.....
Lemon juice.....	1.10	7.96	.....	$\frac{14}{15}$ 5.75	.....	.....	.....	.....
Orange juice.....	4.40	11.90	4.29	$\frac{15}{15}$ 2.61	.....	.....	.....	.....
Orange drink.....	4.40	.....	$\frac{4}{4}$ 3.34	$\frac{15}{15}$ 6.93	.....	.....	.....	.....
Peaches.....	3.70	14.59	26.67	17.01	.....	.....	.....	.....
Peaches, aseptic can....	3.70	.....	.....	$\frac{4}{4}$ 24.07	.....	.....	.....	.....
Pineapple.....	3.20	11.57	.....	12.53	.....	.....	.....	.....
Raspberries.....	2.60	23.34	34.32	24.05	.....	.....	.....	.....

See footnotes at end of table, p. 33.

Product	Serving size	Fresh or home prepared	Frozen	Canned	Ready to serve	Complete mix $\frac{1}{2}$	Incomplete mix $\frac{2}{2}$	Other
	Ounces	Cents	Cents	Cents	Cents	Cents	Cents	Cents
VEGETABLES AND FRUITS--Con.								
Fruits--continued								
Strawberries: Sweetened								
Whole.....	3.50	20.51	17/ 33.00	44.62				
Sliced.....	3.50		17/ 33.16					
Thaw-and-serve pouch.	3.50		4/ 27.47					
Unsweetened, bulk bag, sugar added at home..	3.50		4/ 21.78					
OTHER								
Baby food								
Liver, beef.....	3.50	29.29		34.03				
Peaches.....	4.75	18.76		15.27				
		18/ 21.86						
Peas.....	4.75	45.33		16.16				
		18/ 19.04						
Soups								
Split pea.....	8.48		4/ 38.39					
Condensed.....	8.48			10.92				
Ready-to-heat.....	8.48			4/ 27.59				
Dried, individually packaged servings..	8.48							4/ 15.81

1 Requires only milk or water and sometimes additional flavoring ingredient(s) such as vanilla.
2 Requires eggs and/or other ingredients in addition to the water or milk needed for every dry mix.
3 Chilled.

4 Introduced after 1960.
5 Based on the cost of egg whites only.
6 Brown and serve.
7 Packaged combination.
8 Aerosol can.
9 Dry.
10 Skillet main dish mix.
11 Fully cooked.
12 Dehydrated.
13 Weight of serving reported in ounces for drained solids except for cranberry sauces, lemon juice, orange juice, and orange drink.
14 In plastic container.
15 Bottled.
16 Crystals.
17 Carton.
18 Prepared from canned goods.

SOME NEW USDA PUBLICATIONS

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Single copies of the following are available free from the U.S. Department of Agriculture, Washington, D.C. 20250. Please address your request to the office indicated.

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- HOME CARE OF PURCHASED FROZEN FOODS. G 69. Slightly revised May 1975.
- TREES FOR SHADE & BEAUTY: THEIR SELECTION AND CARE. G 117. Slightly revised April 1975.
- KEEPING FOOD SAFE TO EAT: A GUIDE FOR HOMEMAKERS. Revised July 1975.
- CONTROL OF INSECTS ON DECIDUOUS FRUITS AND TREE NUTS IN THE HOME ORCHARD—WITHOUT INSECTICIDES. G 211. July 1975.
- HOME FREEZING OF POULTRY AND POULTRY MAIN DISHES. AB 371. Revised September 1975.

From Information Division, Agricultural Marketing Service:

- HOW TO BUY CANNED AND FROZEN VEGETABLES. G 167. Revised January 1975.

From Economic Research Service, Division of Information:

- AMERICAN INDIANS IN TRANSITION. AER 283. April 1975.
- 1975 HANDBOOK OF AGRICULTURAL CHARTS. AH 491. October 1975.
- VACANT HOUSING—IS IT ADEQUATE AND IN THE RIGHT PLACES? SB 536. February 1975.

EDUCATIONAL LEVEL OF THE LABOR FORCE

The educational level of the labor force continues to rise. In March 1975, 7 of every 10 workers were at least high school graduates. Three of every ten workers had attended college, and half of these had completed 4 years of college or more.

Unemployment rates were lowest for college graduates and highest for high school dropouts—3 and 15 percent, respectively—in March 1975. Although unemployment rates increased for workers at all educational levels between March 1974 and March 1975, the rise was

sharpest among workers who had not completed 8 years of schooling.

As in the past, a greater proportion of working women than working men were high school graduates, and black workers lagged behind white workers in years of schooling completed.

Source: U.S. Department of Labor, Bureau of Labor Statistics. *Educational Attainment of Workers, March 1975*. Special Labor Force Report, July 1975.

CONSUMER PRICES

Consumer price index for urban wage earners and clerical workers

(1967 = 100)

Group	Oct. 1975	Sept. 1975	Aug. 1975	Oct. 1974
All items.....	164.6	163.6	162.8	153.2
Food.....	179.0	177.8	178.1	166.1
Food at home.....	179.3	178.2	179.0	166.5
Food away from home.....	178.0	176.5	175.3	164.7
Housing.....	169.8	168.9	167.7	156.7
Shelter.....	172.5	171.6	170.7	159.9
Rent.....	139.3	138.4	138.0	132.2
Homeownership.....	184.8	183.9	182.8	170.1
Fuel and utilities.....	172.0	170.9	168.9	155.2
Fuel oil and coal.....	243.3	238.7	235.7	225.5
Gas and electricity....	174.2	174.0	171.2	151.5
Household furnishings and operation.....	160.9	160.1	158.8	149.0
Apparel and upkeep.....	144.6	143.5	142.3	141.1
Men's and boys'.....	143.7	142.8	141.1	141.4
Women's and girls'.....	141.6	139.9	138.7	140.2
Footwear.....	154.4	144.6	143.9	141.7
Transportation.....	156.1	155.4	153.6	145.1
Private.....	154.8	153.9	153.4	144.6
Public.....	168.8	169.5	155.0	148.8
Health and recreation.....	156.3	155.4	154.6	145.2
Medical care.....	173.5	172.2	170.9	156.3
Personal care.....	152.9	152.1	151.4	143.0
Reading and recreation...	146.6	146.0	144.7	137.8
Other goods and services.	148.5	148.0	148.1	141.4

Source: U.S. Department of Labor, Bureau of Labor Statistics.

Index of prices paid by farmers for family living items

(1967 = 100)

Item	Nov. 1975	Oct. 1975	Sept. 1975	Nov. 1974	Oct. 1974	Sept. 1974
All items.....	182	180	180	171	167	166
Food and tobacco.....	---	---	182	---	---	167
Clothing.....	189	---	---	---	---	176
Household operation.....	---	180	---	---	---	161
Household furnishings.....	---	159	---	---	---	146
Building materials, house..	---	---	189	---	---	181

Source: U.S. Department of Agriculture, Statistical Reporting Service.

FAMILY ECONOMICS REVIEW
WINTER 1976

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This issue is made up, for the most part, of condensations of papers prepared for the National Agricultural Outlook Conference, held in Washington, D.C., November 17-20, 1975. For a free copy of the complete text, send your request—giving title and author of the Article—to the Consumer and Food Economics Institute, Agricultural Research Service, U.S. Department of Agriculture, Federal Building, Hyattsville, MD 20782. Please give your ZIP code with your return address.

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